ADEQ

ARKANSAS
Department of Environmental Quality

MEMORANDUM

TO: Mo Shafii, Assistant Chief, Water Division

THRU: Tammie J. Hynum, Chief, HWD
Penny J. Wilson, Enforcement & Inspection Branch Manager, HWD
Jessica N. Gabaldon, Inspector Supervisor, HWD

FROM: Ann Blake, Hazardous Waste Inspector, HWD

DATE: February 19, 2014

SUBJECT: Complaint Investigation # 016556
Pulpmill Services Inc./Ideal Construction Company

On January 10, 2014, a National Response Center (NRC) report was forwarded to ADEQ (NRC# 1070674) for a black liquor release occurring on January 9, 2014 at 20:00 (see Attachment A – NRC Report# 1070674). This report stated that equipment failure from a storage tank at 527 Hancock Rd in Ashley County, Arkansas caused an unknown amount of black liquor to release onto the ground and onto neighboring property. The facility owners are Ideal Construction Company in conjunction with Pulpmill Services, Inc. (hereinafter "PSI"). The report also stated that sand bags were being utilized by the facility.

A second NRC report was forwarded to ADEQ on January 15, 2014 (NRC# 1071250) stating that on January 9, 2014 at 16:00, approximately 2000 gallons of black liquor was released from a tank at PSI onto the ground. The report indicated that testing for pH was conducted and that vacuum trucks were being used (see Attachment B – NRC Report# 1071250).

John Lamb, District 5 RST Inspector, responded to investigate the release on January 16, 2014, and documented in a memo to Dean Vanderhoff, Emergency Response Coordinator of ADEQ, that PSI employees had pumped black liquor from a drum washer onto the ground believing the content was only rainwater (see Attachment C – ER 14-0023 Memo from John Lamb, RST Inspector to Dean VanDerhoff, Emergency Response Coordinator). According to Mr. Lamb's investigation, PSI personnel indicated that the material was spent black liquor mixed with rain water. Once the PSI employees realized the substance was black liquor they ceased pumping the waste onto the ground. However, the substance had made its way off-site and flowed north onto two (2) residential properties. These properties belong to Dana Cross/Tate Watt and Terry Meeks/Eva Williams. Later in the evening, PSI applied sand, sand bags, booms, and absorbent material on the PSI laydown yard and both residential properties. According to Mr. Lamb's investigation there is a waterwell next to the path of the material in Ms. Meeks' yard. It was not

currently being used but Ms. Meeks later stated that she had plans to use the well for irrigation purposes. PSI took samples of the liquid material in the PSI laydown yard and both residential yards. These samples were taken to American Interplex for analysis (see Attachment D – PSI samples results).

On January 27, 2014, a multi-media investigation and hazardous waste sampling event was conducted with Hazardous Waste, Solid Waste, and Air Division Inspectors at the PSI site and both residential properties. We met with PSI employees to discuss the release and conducted a walk-through of the residential properties. Mr. Mike Webb, Vice President of PSI, arrived on-site to discuss the site and indicated that an incident report had been written by Rod Eddy, Safety Director of PSI (see Attachment E – PSI Incident Report). This incident report documents that the drum washer was being stored at the Ideal Construction laydown yard and that on January 9, 2014 it was being prepared for transport to the PSI home office in Monroe, LA. A pump was placed inside the drum washer to dispel the content believing it was water. Shortly after pumping began PSI employees noticed that diluted black liquor was being pumped out. Once this was noticed, according to employee statements, they immediately shut down the pump. The report documents that the substance ran into the neighboring properties to the north of the laydown yard. Rain hindered the clean-up efforts but PSI started clean-up at the closest residential property at 7:30 p.m. with sand bags and 3" containment booms as well as a vacuum truck. On January 10, 2014, Tawana Miller with the Office of Emergency Management (OEM) arrived on site and met with the facility personnel to discuss the procedures being conducted to abate the incident. Remedial actions began on the farthest residential property. PSI vacuumed up surface residues. Several 12-14" holes were dug to allow surface drainage and collection. On January 11, 2014, water samples were collected and field pH was taken. According to PSI's report, field pH results, both at the facility and on neighboring properties, were between 6.8 and 7.2 S.U. According to samples collected and analyzed by ADEQ personnel, no constituents of hazardous waste were detected above regulatory limits (see Attachment F – ADEQ Analytical Report).

On February 2, 2014, a complaint was reported indicating that black liquor was coming from the PSI property onto their property once again because of the heavy rains. Mr. Eddy was contacted on February 2, 2014 to address this release. ADEQ – Hazardous Waste Inspectors investigated this complaint on February 3, 2014 and met with Rod Eddy at the site. Mr. Eddy indicated that at approximately 8:30 p.m. on February 2, 2014, a vacuum truck vacuumed up two areas of standing liquids; 1) pool of liquid area on the PSI side of the fence, and 2) the area crossing through the fence flowing north across the property owner's driveway toward their mobile home. At the time of the site visit, PSI was collecting contaminated sand inside PSI property that had been used as an absorbent during the release. PSI personnel were collecting it in a 10 cubic meter hydraulic trailer lined with polyethylene plastic sheeting. The neighboring properties (Terry Meeks' property) still had standing dark liquids near the dog pen. A field pH was taken and found to be 8.3 S.U.

PSI took photographs of the clean-up and those photos were sent to ADEQ via e-mail (see Attachment G-Photographic Log). The most recent photos taken were those received February 4, 2014 at 2:37 p.m. (last photos). In addition, Mr. Eddy submitted documentation, via e-mail, that affected soils in the laydown yard have been removed and additional samples have been sent to American Interplex. Soil has also been removed from the neighboring yard between the PSI fence and neighbor's driveway. (see Attachment H – PSI E-mails). There are concerns from the

neighboring property owners that on-going rains will continue to bring the released black liquor to the surface and will continue to contaminate their property.

Based on the information obtained during the investigation and the ADEQ analytical results, there are no hazardous waste issues. However, we are forwarding all of this information to the Water Division for your evaluation under the Clean Water Act.

Attachment A

NRC Report # 1070674

Blake, Ann

From: HQS-PF-fldr-NRC@uscg.mil
Sent: Friday, January 10, 2014 9:26 AM
To: VanDerhoff, Dean; Hunting, Thomas; Mehran, Patrick
Subject: NRC#1070674

NATIONAL RESPONSE CENTER 1-800-424-8802
GOVERNMENT USE ONLYGOVERNMENT USE ONLY***
Information released to a third party shall comply with any
applicable federal and/or state Freedom of Information and Privacy Laws

Incident Report # 1070674

INCIDENT DESCRIPTION

*Report taken by: MST3 ANNALIESE ENNIS at 10:12 on 10-JAN-14
Incident Type: STORAGE TANK
Incident Cause: EQUIPMENT FAILURE
Affected Area:
Incident occurred on 09-JAN-14 at 20:00 local incident time.
Affected Medium: LAND GRASS AND DIRT, TREES

REPORTING PARTY
Name: TERRY MEEKS
Address: 527 HANCOCK RD
CROSSETT, AR
Email Address: tmeeks@industrialmills.com

PRIMARY Phone: (870)5009444

SUSPECTED RESPONSIBLE PARTY
Name: MIKE WEBB
Organization: IDEAL CONSTRUCTION
Address: 803 WEST 1ST AVE
CROSSETT, AR
PRIMARY Phone: (870)3644185

INCIDENT LOCATION
527 HANCOCK RD County: ASHLEY
City: CROSSETT State: AR

RELEASED MATERIAL(S)
CHRIS Code: NCC Official Material Name: NO CHRIS CODE
Also Known As: BLACK LIQUOR
Qty Released: 0 UNKNOWN AMOUNT

DESCRIPTION OF INCIDENT

CALLER IS REPORTING A RELEASE OF AN UNKNOWN AMOUNT OF BLACK LIQUOR ONTO THE GROUND FROM A STORAGE TANK ON A NEIGHBORING PROPERTY THAT BROKE. THE RELEASE SPREAD FROM THEIR PROPERTY ONTO THE CALLERS AND SAND BAGS HAVE BEEN APPLIED BY THE SPILLER.

SENSITIVE INFORMATION

INCIDENT DETAILS

Description of Tank: UNKNOWN
Tank Above/Below Ground: ABOVE
Transportable Container: UNKNOWN
Tank Regulated: UNKNOWN
Tank Regulated By:
Tank ID:
Capacity of Tank:
Actual Amount:

IMPACT

Fire Involved: NO Fire Extinguished: UNKNOWN

INJURIES: NO Hospitalized: Empl/Crew: Passenger:
FATALITIES: NO Empl/Crew: Passenger: Occupant:
EVACUATIONS:NO Who Evacuated: Radius/Area:

Damages: NO

Closure Type	Description of Closure	Hours Closed	Direction of Closure
Air: N			
Road: N	Major Artery:N		
Waterway: N			
Track:			

Environmental Impact: UNKNOWN
Media Interest: NONE Community Impact due to Material:

REMEDIAL ACTIONS

SAND BAGS HAVE BEEN APPLIED.
Release Secured: UNKNOWN
Release Rate:
Estimated Release Duration:

WEATHER

Weather: RAINY, 35ºF

ADDITIONAL AGENCIES NOTIFIED

Federal:
State/Local: SHERRIFFS DEPT
State/Local On Scene:
State Agency Number:

NOTIFICATIONS BY NRC

AR DEPT OF ENVIRONMENTAL QUALITY (COMMAND CENTER)
10-JAN-14 10:25 (501)6820713
ARKANSAS DEPT OF HEALTH & HUMAN SVC (MAIN OFFICE - DIVISION OF HEALTH)
10-JAN-14 10:25 (501)6612136
ARKANSAS POISON CENTER (MAIN OFFICE)
10-JAN-14 10:25 (501)6866161
AR STATE EMERGENCY SERVICES (MAIN OFFICE)
10-JAN-14 10:25 (501)6836700
CGIS RAO ST. LOUIS (COMMAND CENTER)
10-JAN-14 10:25 (314)2692420
DOT CRISIS MANAGEMENT CENTER (MAIN OFFICE)
10-JAN-14 10:25 (202)3661863
U.S. EPA VI (MAIN OFFICE)
(866)3727745
LA DEPT OF ENV QUAL (MAIN OFFICE)
10-JAN-14 10:25 (225)2193640
LA GOV OFFICE HS AND EMERGENCY PREP (MAIN OFFICE)
10-JAN-14 10:25 (225)9257500
MEMPHIS POLICE DEPT (COMMAND CENTER)
10-JAN-14 10:25 (901)5432700
NATIONAL INFRASTRUCTURE COORD CTR (MAIN OFFICE)
10-JAN-14 10:25 (202)2829201
NOAA RPTS FOR AR (MAIN OFFICE)
10-JAN-14 10:25 (206)5264911
NATIONAL RESPONSE CENTER HQ (AUTOMATIC REPORTS)
10-JAN-14 10:25 (202)2671136
SHELBY SHERIFF'S OFFICE (CRIMINAL INTELLIGENCE UNIT)
10-JAN-14 10:25 (901)5453114
LA STATE POLICE (MAIN OFFICE)
10-JAN-14 10:25 (225)9256595
USCG DISTRICT 8 (MAIN OFFICE)
10-JAN-14 10:25 (504)5896225

ADDITIONAL INFORMATION

*** END INCIDENT REPORT #1070674 ***
Report any problems by calling 1-800-424-8802
PLEASE VISIT OUR WEB SITE AT http://www.nrc.uscg.mil

Attachment B

NRC Report # 1071250

Blake, Ann

From: HQS-PF-fldr-NRC@uscg.mil
Sent: Wednesday, January 15, 2014 3:22 PM
To: VanDerhoff, Dean; Hunting, Thomas; Mehran, Patrick
Subject: NRC#1071250

NATIONAL RESPONSE CENTER 1-800-424-8802
GOVERNMENT USE ONLYGOVERNMENT USE ONLY***
Information released to a third party shall comply with any
applicable federal and/or state Freedom of Information and Privacy Laws

Incident Report # 1071250

INCIDENT DESCRIPTION

*Report taken by: MST2 JOSHUA DIAZ at 16:16 on 15-JAN-14
Incident Type: STORAGE TANK
Incident Cause: DUMPING
Affected Area:
Incident occurred on 09-JAN-14 at 16:00 local incident time.
Affected Medium: LAND GROUND

REPORTING PARTY
Name: TATE WATT

PRIMARY Phone: (870)3040075

SUSPECTED RESPONSIBLE PARTY
Name: UNKNOWN
Organization: PULP MILL SERVICES

MONROE, LA

INCIDENT LOCATION
519 HANCOCK RD County: ASHLEY
City: CROSSETT State: AR

RELEASED MATERIAL(S)
CHRIS Code: NCC Official Material Name: NO CHRIS CODE
Also Known As: BLACK LIQUOR
Qty Released: 2000 GALLON(S)

DESCRIPTION OF INCIDENT

CALLER STATED THAT THEY DUMPED BLACK LIQUOR ONTO THE GROUND SURFACE. THEY WANTED TO MOVE A TANK SO THEY DUMPED THE PRODUCT ON THE GROUND. CALLER STATED THAT THERE HAVE NOT BEEN ANY TESTING FOR HAZARDOUS MATERIALS AND ONLY THE PH WAS TESTED. THE TANK HAS NO LABELS ON IT THAT THE MATERIAL CAME OUT OF.

SENSITIVE INFORMATION

INCIDENT DETAILS

Description of Tank: DRYIER TANK
Tank Above/Below Ground: ABOVE
Transportable Container: UNKNOWN
Tank Regulated: UNKNOWN
Tank Regulated By:
Tank ID:
Capacity of Tank:
Actual Amount:

IMPACT

Fire Involved: NO Fire Extinguished: UNKNOWN

INJURIES: NO Hospitalized: Empl/Crew: Passenger:
FATALITIES: NO Empl/Crew: Passenger: Occupant:
EVACUATIONS:NO Who Evacuated: Radius/Area:

Damages: NO

Closure Type	Description of Closure	Hours Closed	Direction of Closure
Air: N			
Road: N		Major Artery:N	
Waterway: N			
Track:			

Environmental Impact: UNKNOWN
Media Interest: UNKNOWN Community Impact due to Material:

REMEDIAL ACTIONS

THEY USED VAC TRUCKS.
Release Secured: UNKNOWN
Release Rate:
Estimated Release Duration:

WEATHER

Weather: RAINY, ºF

ADDITIONAL AGENCIES NOTIFIED

Federal:
State/Local: AR ENVIRONMENTAL QUALITY
State/Local On Scene:
State Agency Number:

NOTIFICATIONS BY NRC

AR DEPT OF ENVIRONMENTAL QUALITY (COMMAND CENTER)
15-JAN-14 16:21 (501)6820713
ARKANSAS DEPT OF HEALTH & HUMAN SVC (MAIN OFFICE - DIVISION OF HEALTH)
15-JAN-14 16:21 (501)6612136
ARKANSAS POISON CENTER (MAIN OFFICE)
15-JAN-14 16:21 (501)6866161
AR STATE EMERGENCY SERVICES (MAIN OFFICE)
15-JAN-14 16:21 (501)6836700
CGIS RAO ST. LOUIS (COMMAND CENTER)
15-JAN-14 16:21 (314)2692420
DHS PROTECTIVE SECURITY ADVISOR (PSA DESK)
15-JAN-14 16:21 (703)2355724
DOT CRISIS MANAGEMENT CENTER (MAIN OFFICE)
15-JAN-14 16:21 (202)3661863
U.S. EPA VI (MAIN OFFICE)
(866)3727745
GULF STRIKE TEAM (MAIN OFFICE)
15-JAN-14 16:21 (251)4416601
LA DEPT OF ENV QUAL (MAIN OFFICE)
15-JAN-14 16:21 (225)2193640
LA GOV OFFICE HS AND EMERGENCY PREP (MAIN OFFICE)
15-JAN-14 16:21 (225)9257500
MEMPHIS POLICE DEPT (COMMAND CENTER)
15-JAN-14 16:21 (901)5432700
NATIONAL INFRASTRUCTURE COORD CTR (MAIN OFFICE)
15-JAN-14 16:21 (202)2829201
NOAA RPTS FOR AR (MAIN OFFICE)
15-JAN-14 16:21 (206)5264911
NATIONAL RESPONSE CENTER HQ (AUTOMATIC REPORTS)
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SHELBY SHERIFF'S OFFICE (CRIMINAL INTELLIGENCE UNIT)
15-JAN-14 16:21 (901)5453114
LA STATE POLICE (MAIN OFFICE)
15-JAN-14 16:21 (225)9256595
USCG DISTRICT 8 (MAIN OFFICE)
15-JAN-14 16:21 (504)5896225

ADDITIONAL INFORMATION

CALLER STATED THAT THE PRODUCT KEEPS COMING OUT OF THE GROUND.

*** END INCIDENT REPORT #1071250 ***
Report any problems by calling 1-800-424-8802
PLEASE VISIT OUR WEB SITE AT http://www.nrc.uscg.mil

Attachment C

ER 14-0023 Memo
From
John Lamb, RST Inspector
To
Dean VanDerhoff, ER Coordinator

ADEQ

ARKANSAS
Department of Environmental Quality

MEMORANDUM

TO: Dean Vanderhoff, Emergency Response Coordinator

THRU: Sam McDuffie, RST Inspector Supervisor

FROM: John Lamb, District 5 RST Inspector

CC: Kerri McCabe, Inspector Supervisor, Water Division
Karla Schaeffer, Administrative Specialist, Water Division
Penny Wilson, Hazardous Waste Division

DATE: 21 January 2014

SUBJECT: ER 14-0023, Black Liquor Spill, Crossett, AR

This memorandum is in response to a reported black liquor spill that was reported to have occurred on 09 January 2014 in on Hancock Road, near Crossett, Arkansas (Ashley County).

On 15 January 2014, I was contacted by Dean Vanderhoff, Emergency Response Coordinator, concerning a spill/release of supposed black liquor from Pulpmill Services, Inc. that had occurred the previous week and had been reported to be approximately 5 gallons.

I responded to the site on 16 January 2014 and met with Tawana Miller, Ashley County Emergency Coordinator, Rod Eddy, Pulpmill Services, Inc. (Safety) and Ronnie Marsh, President of Pulpmill Services. According to Mr. Eddy, on 09 January an employee had gone to the location to dewater a large drum washer filter that had been taken out of the G-P Crossett Paper Mill some 14 years prior. The drum is approximately 15 feet in diameter and had been setting on a laydown yard for around 14 years. The facility thought that the only thing in the drum was rainwater. According to the facility, the employee began to pump out the supposed rainwater onto the ground and noticed that the material discharged was very black and immediately stopped the discharge. According to the facility, the material is spent black liquor mixed with rainwater.

At some point soon after, it began to rain which mixed with substance, migrated offsite and ultimately into two neighboring residential yards before being contained. Ms. Miller stated that she had been on scene observing the response and cleanup. One residence is owned by Mr. Robert "Tate" Watt and the other residence is owned by Ms. Terri Meeks and her mother, Ms. Eva Williams.

The material had flowed downslope approximately 120 meters. The facility had placed sand, sand bag, booms and absorbent on the contractor's yard, and in the residents' yard. There was a waterwell right next to the path of the material in Ms. Meeks yard. It was not currently being used, but Ms. Meeks stated later she had plans on putting the well in service to use for irrigation.

According to Mr. Eddy, they had taken had taken pH samples of the material in the washer drum which was a 9 S.U. He stated they had taken pH of the material as in ran through yards was in the 7 range. He also stated that soil samples had been taken of the yards and they were waiting on results. Mr. Marsh stated that they had plans on removing the material the day of the site visit since it had been so wet and not wanting to make more of a mess in the yards.

I then met with Ms. Meeks, Ms. Williams and latter Mr. Watts along with Mr. Marsh, Mr. Eddy and Ms. Miller. The residents were concerned with contamination of their property. Ms. Meeks had been in contact with Attorney Richard Byrd of Hamburg, concerning the issue. According to Ms. Meeks she had been advised by Mr. Byrd to not allow the sand, bags or absorbent to be removed without the ADEQ consent. I was advised by Mr. Vanderhoff to stress that if the land owners did not want to allow Pulpmill Services to clean up their property, then the landowners could assume responsibility for the cleanup. Ms. Meeks spoke with Mr. Byrd and told her what I had said. She agreed to allow Pulpmill Services to remove the sand, bags, and absorbent from her property which would keep what was caught in the material from migrating downslope or into the ground in the event of more rain.

The facility provided MSDS for black liquor that listed several hazardous ingredients. (See attached MSDS) They also had printed material which stated that alcohols, aldehydes, and phenols could be in black liquor. Ms. Meeks was greatly concerned about any possible contamination of her property and water well. Mr. Watts also stated he was concerned about contamination on his property. They both felt the amount of material spilled seemed to more than 5 gallons or so reported by Pulpmill Services.

I provided the ADEQ certified lab web link to the facility and later via email to Ms. Meeks and Mr. Watts so they could choose a 3rd party for testing. Mr. Eddy emailed me on Friday 17 January stating that he had been in contact with American Interplex and had taken 9 samples. (See Attached Email).

This matter is being forwarded to the Water Division for follow on, and Hazardous Waste Division for review.

Mr. Lamb & Ms Miller
This is to let you know that I collected 9-soil samples yesterday after speaking with the lab for instructions on collection. We marked by flag the locations of the samples. I also collected a sample out of the drum for analysis.
The samples are in route to American Interplex Corporation in Little Rock, AR for analysis. As soon as we receive the results we will get a copy to you for your file.
If you need anything from me, don't hesitate to call.

Rod Eddy, Director of Safety
Pulpmill Services, Inc.
Reddy@pulpmillservices.com
318-325-4351 - Office
318-535-5024 – Cell
318-387-7143 – Fax

Arkansas Department of Environmental Quality (ADEQ) Official Photograph Sheet								
Location:	ER 14-0023, Hancock Road, Crossett, AR							
Photographer:	John Lamb				**Witness:**	N/A		
Photo #	1	**Of**	12		**Date:**	1/16/2013	**Time:**	9:11
Description:	Drum roller washer where substance was pumped from							

Photographer:	John Lamb				**Witness:**	N/A		
Photo #	2	**Of**	12		**Date:**	1/16/2013	**Time:**	
Description:	As above showing scale next to skidsteer.							

Arkansas Department of Environmental Quality (ADEQ)
Official Photograph Sheet

Location:	ER 14-0023, Hancock Road, Crossett, AR						
Photographer:	John Lamb			**Witness:**	N/A		
Photo #	3	**Of**	112	**Date:**	1/16/2013	**Time:**	9:11
Description:	Contractor's yard, showing booms, sand bags and dirt						

Photographer:	John Lamb			**Witness:**	N/A		
Photo #	4	**Of**	12	**Date:**	1/16/2013	**Time:**	9:11
Description:	As above showing discoloured soil						

Arkansas Department of Environmental Quality (ADEQ) Official Photograph Sheet								
Location:	ER 14-0023, Hancock Road, Crossett, AR							
Photographer:	John Lamb				**Witness:**	N/A		
Photo #	5	**Of**	12		**Date:**	1/16/2013	**Time:**	9:14
Description:	Trailer were facility is putting soil collected for disposal							

Photographer:	John Lamb				**Witness:**	N/A		
Photo #	6	**Of**	12		**Date:**	1/16/2013	**Time:**	9:21
Description:	Robert "Tate" Watt's drive way, showing flow of spill offsite							

Arkansas Department of Environmental Quality (ADEQ)
Official Photograph Sheet

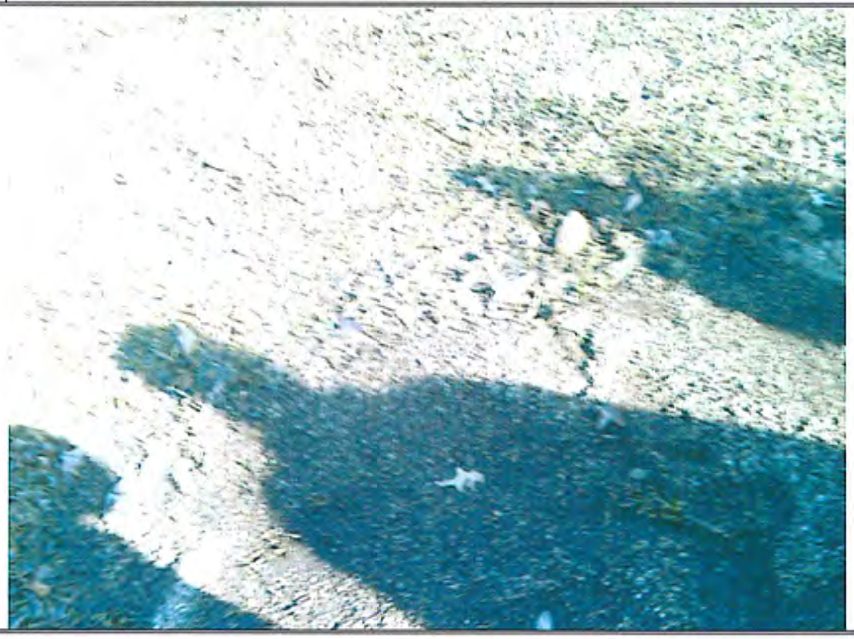
Location:	ER 14-0023, Hancock Road, Crossett, AR						
Photographer:	John Lamb			**Witness:**	N/A		
Photo #	7	**Of**	12	**Date:**	1/16/2013	**Time:**	9:22
Description:	Absorbent placed next to carport of Mr Watt.						

Photographer:	John Lamb			**Witness:**	N/A		
Photo #	8	**Of**	12	**Date:**	1/16/2013	**Time:**	9:22
Description:	Sands bags and sand placed on Mr Watt and Ms Meeks property						

Arkansas Department of Environmental Quality (ADEQ)
Official Photograph Sheet

Location:	ER 14-0023, Hancock Road, Crossett, AR						
Photographer:	John Lamb			**Witness:**	N/A		
Photo #	9	**Of**	12	**Date:**	1/16/2013	**Time:**	9:22
Description:	Showing up close						

Photographer:	John Lamb			**Witness:**	N/A		
Photo #	10	**Of**	12	**Date:**	1/16/2013	**Time:**	9:23
Description:	Absorbent material in yard						



Arkansas Department of Environmental Quality (ADEQ) Official Photograph Sheet								
Location:	ER 14-0023, Hancock Road, Crossett, AR							
Photographer:	John Lamb				**Witness:**	N/A		
Photo #	11	**Of**	12		**Date:**	1/16/2013	**Time:**	9:24
Description:	Ms Meeks' yard, showing sandbags and absorbent							

Photographer:	John Lamb				**Witness:**	N/A		
Photo #	12	**Of**	12		**Date:**	1/16/2013	**Time:**	9:25
Description:	Ms Meeks' water well next to path of spill							


water well,
Ms. Meeks Residence
approx. flow of material
Mobile home owned by Mr. Watts
ER 14-0023
Washer drum
© 2013 Google
1994
Imagery Date: 11/12/2012 33°08'44.18

Attachment D

PSI Sample Results

Blake, Ann

From: Rod Eddy <REddy@pulpmillservices.com>
Sent: Wednesday, January 29, 2014 2:11 PM
To: Blake, Ann; Lamb, John; ashleyoem@sbcglobal.net
Cc: Ronnie Marsh
Subject: American Interplex Report
Attachments: LAB REPORT.pdf

Ms. Blake, Mr. Lamb, Ms. Miller;
Please find attached the results from American Interplex Corporation Lab regarding the "black liquor" incident on Hancock Rd. Crossett, AR
I added the sample locations on the attached report for reference. If you would like a copy without the reference notes, just let me know and I can forward that to you.
In the report is a copy of all transmittal documents delivered to American Interplex at time of delivery to them for analysis. (MSDS and American Forest & Paper Association report AR 201-12936)
Also incorporated in the attachment is an email from Mr. Bradford with American Interplex today in response to a question I asked him to address.
If I can provide you anything else at this time, please let me know.
I will be hand delivering a copy of this report and correspondence to the home owners tomorrow morning.

Respectfully,

Rod Eddy, Director of Safety
Pulpmill Services, Inc.
Reddy@pulpmillservices.com
318-325-4351 - Office
318-535-5024 – Cell
318-387-7143 - Fax

AMERICAN INTERPLEX CORPORATION
LABORATORIES

January 28, 2014
Control No. 174593

Pulpmill Services, Inc
ATTN: Mr. Rod Eddy
357 Fontana Road
Monroe, LA 71203

This report contains the analytical results for samples submitted on January 17, 2014. Any documents received are included at the end of the report. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report has been reviewed by the Laboratory Director or a qualified designee.

John Overbey
Laboratory Director

AMERICAN INTERPLEX CORPORATION
LABORATORIES

Pulpmill Services, Inc
357 Fontana Road
Monroe, LA 71203

ANALYTICAL RESULTS

AIC No. 174593-1
Sample Identification: 001 1-16-2014 1:35pm

Analyte Between Wght-Driveway & Fence	Method	Result	Units
Sulfide as Sodium Sulfide	EPA 9030B, 9034	< 30	mg/Kg
Chloride as Sodium Chloride	EPA 9056A	62	mg/Kg
Thiosulfate as Sodium Thiosulfate	Mod. EPA 9056A	3.2	mg/Kg
pH	EPA 9045C	7.0	Units

AIC No. 174593-2
Sample Identification: 002 1-16-2014 1:44pm

Analyte Goat Pen	Method	Result	Units
Sulfide as Sodium Sulfide	EPA 9030B, 9034	< 30	mg/Kg
Chloride as Sodium Chloride	EPA 9056A	14	mg/Kg
Thiosulfate as Sodium Thiosulfate	Mod. EPA 9056A	< 2	mg/Kg
pH	EPA 9045C	5.8	Units

AIC No. 174593-3
Sample Identification: 003 1-16-2014 1:51pm

Analyte Car Port	Method	Result	Units
Sulfide as Sodium Sulfide	EPA 9030B, 9034	< 30	mg/Kg
Chloride as Sodium Chloride	EPA 9056A	31	mg/Kg
Thiosulfate as Sodium Thiosulfate	Mod. EPA 9056A	< 2	mg/Kg
pH	EPA 9045C	6.6	Units

AIC No. 174593-4
Sample Identification: 004 1-16-2014 1:55pm

Analyte North End of Trailer	Method	Result	Units
Sulfide as Sodium Sulfide	EPA 9030B, 9034	< 30	mg/Kg
Chloride as Sodium Chloride	EPA 9056A	39	mg/Kg
Thiosulfate as Sodium Thiosulfate	Mod. EPA 9056A	3.1	mg/Kg
pH	EPA 9045C	6.4	Units

AIC No. 174593-5
Sample Identification: 005 1-16-2014 2:03pm

Analyte Baseline Sample Between Trailer & Moores House Near Bush	Method	Result	Units
Sulfide as Sodium Sulfide	EPA 9030B, 9034	< 30	mg/Kg
Chloride as Sodium Chloride	EPA 9056A	4.7	mg/Kg
Thiosulfate as Sodium Thiosulfate	Mod. EPA 9056A	< 2	mg/Kg
pH	EPA 9045C	4.8	Units

AIC No. 174593-6
Sample Identification: 006 1-16-2014 2:07pm

Analyte Meek's Yard #1	Method	Result	Units
Sulfide as Sodium Sulfide	EPA 9030B, 9034	< 30	mg/Kg
Chloride as Sodium Chloride	EPA 9056A	6.8	mg/Kg

AMERICAN INTERPLEX CORPORATION
LABORATORIES

Pulpmill Services, Inc
357 Fontana Road
Monroe, LA 71203

ANALYTICAL RESULTS

AIC No. 174593-6 (Continued)
Sample Identification: 006 1-16-2014 2:07pm

Analyte	Method	Result	Units
Thiosulfate as Sodium Thiosulfate	Mod. EPA 9056A	< 2	mg/Kg
pH	EPA 9045C	5.4	Units

AIC No. 174593-7
Sample Identification: 007 1-16-2014 2:10pm

Analyte Mucks Yard Dog Pen	Method	Result	Units
Sulfide as Sodium Sulfide	EPA 9030B, 9034	< 30	mg/Kg
Chloride as Sodium Chloride	EPA 9056A	11	mg/Kg
Thiosulfate as Sodium Thiosulfate	Mod. EPA 9056A	< 2	mg/Kg
pH	EPA 9045C	5.2	Units

AIC No. 174593-8
Sample Identification: 008 1-16-2014 2:20pm

Analyte Yard North of Mock House	Method	Result	Units
Sulfide as Sodium Sulfide Base Line Sample	EPA 9030B, 9034	< 30	mg/Kg
Chloride as Sodium Chloride	EPA 9056A	< 4	mg/Kg
Thiosulfate as Sodium Thiosulfate	Mod. EPA 9056A	< 2	mg/Kg
pH	EPA 9045C	5.3	Units

AIC No. 174593-9
Sample Identification: 009 1-16-2014 2:26pm

Analyte North Yard Low Section	Method	Result	Units
Sulfide as Sodium Sulfide	EPA 9030B, 9034	< 30	mg/Kg
Chloride as Sodium Chloride	EPA 9056A	< 4	mg/Kg
Thiosulfate as Sodium Thiosulfate	Mod. EPA 9056A	< 2	mg/Kg
pH	EPA 9045C	5.0	Units

AIC No. 174593-10
Sample Identification: 010 1-16-2014 3:45pm

Analyte	Method	Result	Units
Sulfide as Sodium Sulfide	EPA 9030B, 9034	< 30	mg/Kg
Chloride as Sodium Chloride	EPA 9056A	6000	mg/Kg
Thiosulfate as Sodium Thiosulfate	Mod. EPA 9056A	370	mg/Kg
pH	EPA 9045C	10	Units

Gmail by Google

Rod Eddy < rod.pulpmillsafety@gmail.com>

FW: American Interplex Report 174593

1 message

Rod Eddy < REddy@pulpmillservices.com> Wed, Jan 29, 2014 at 12:58 PM
To: "rod.pulpmillsafety@gmail.com" <rod.pulpmillsafety@gmail.com>

From: Steve Bradford [mailto:sbradford@americaninterplex.com]
Sent: Wednesday, January 29, 2014 12:25 PM
To: Rod Eddy
Subject: RE: American Interplex Report 174593

Rod,

We could not perform the analysis for Sodium Carbonate or Sodium Hydroxide (Total Alkali) as the method for these analysis are designed to be performed on the black liquor itself and are not applicable to soil samples. Based on the analysis that we could perform, it does not appear that any substantial amount of the contents of the drum sample were present soil samples.

Thanks,

Steve Bradford

From: American Interplex [mailto:interplex@americaninterplex.com]
Sent: Wednesday, January 29, 2014 12:21 PM
To: sbradford@americaninterplex.com
Subject: FW: American Interplex Report 174593

From: Rod Eddy [mailto:REddy@pulpmillservices.com]
Sent: Wednesday, January 29, 2014 11:52 AM
To: 'American Interplex'
Cc: Ronnie Marsh
Subject: RE: American Interplex Report 174593

501-224-5060 Phone

501-224-5072 Fax

Please direct the following questions to Mr. Steve Bradford;

Mr. Bradford,

I was aware based on our phone conversation that you would not be able to provide analysis on the Lignin, cellulose or extractive as requested on my chain of custody form. However, unless I am not reading the American Interplex report correctly, it also does not contain analysis of;

1. Sodium Carbonate,
2. Sodium Hydroxide

Can you explain why these were excluded from testing?

Also, based on the results, are you able to conclude whether any of the recorded levels of any of the tests you conducted would constitute any kind of hazard?

Thank you,

Rod Eddy, Director of Safety

Pulpmill Services, Inc.

Reddy@pulpmillservices.com

318-325-4351 - Office

318-535-5024 – Cell

318-387-7143 - Fax

From: American Interplex [mailto:interplex@americaninterplex.com]
Sent: Wednesday, January 29, 2014 11:07 AM
To: Rod Eddy
Subject: American Interplex Report 174593

Your report is attached. Have a great day!

Thank you,

American Interplex Corporation

AMERICAN INTERPLEX CORPORATION
LABORATORIES

8600 Kanis Road
Little Rock, AR 72204-2322
(501) 224-5060
FAX (501) 224-5072

CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

PAGE 1 OF 2

Client: Pulpwill Services, Inc.
Project Reference: IDEAL-ENVIRO-12014
Project Manager: Rod Eddy
Sampled By: Rod Eddy

PO No.

SAMPLE MATRIX: W A T E R; S O I L

NO OF BOTTLES

ANALYSES REQUESTED: pH; Sodium Carbonate; Sodium Hydroxide; Sodium Sulfide; Sodium thiosulfate; Sodium Chloride; Lignin see pg 7 on Attached #2; Cellulose see pg 7 on Attachment #2; Extractive see pg 7 on Attached #2

AIC CONTROL NO: 174,593
AIC PROPOSAL NO:
Carrier:
Received on Ice (4°C)? YES NO SP246 1-17-14
Remarks

AIC No.	Sample Identification	Date/Time Collected	GRAB	COMP	WATER	SOIL	NO OF BOTTLES	Remarks
	001	1-16-2014 1:35pm						0°F, 1.9.
	002	1-16-2014 1:44 pm						
	003	1-16-2014 1:51 pm						
	004	1-16-2014 1:55 pm						
	005	1-16-2014 2:03						
	006	1-16-2014 2:07 pm						
	007	1-16-2014 2:10 pm						
		Container Type				G		Field pH calibration
		Preservative						on _____ @ _____ Buffer:

(G = Glass) NO = none P = Plastic S = Sulfuric acid pH2 V = VOA vials N = Nitric acid pH2 H = HCl to pH2 B = NaOH to pH12 T = Sodium Thiosulfate Z = Zinc acetate

Turnaround Time Requested: (Please circle)
(NORMAL) or EXPEDITED IN ____ DAYS
Expedited results requested by: _____
Who should AIC contact with questions: Rod Eddy
Phone: 318-535-5024 Fax: 318-387-7143
Report Attention to: Rod Eddy
Report Address to: Pulpwill Services, Inc.
357 Fontana, Rd
Monroe, LA 71203

Relinquished By:	Date/Time	Received By:	Date/Time
	1-17-14 1:50pm		
Relinquished By:	Date/Time	Received in Lab By:	Date/Time
			1-17-14 1:50pm

Comments:

5/01 FORM 0060

AMERICAN INTERPLEX CORPORATION LABORATORIES

8600 Kanis Road
Little Rock, AR 72204-2322
(501) 224-5060
FAX (501) 224-5072

CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

Client: Pulpmill Services, Inc.
Project Reference: IDEAL-ENVIRO-12014
Project Manager: Rod Eddy
Sampled By: Rod Eddy

PO No.:

AIC CONTROL NO: 174593
AIC PROPOSAL NO:
Carrier:
Received on Ice (4°C)? YES / NO (NO struck through, initialed SCPZ/F 1-17-14)

ANALYSES REQUESTED

AIC No.	Sample Identification	Date/Time Collected	GRAB	COMP	WATER	SOIL		NO OF BOTTLES	pH	Sodium Carbonate	Sodium Hydroxide	Sodium Sulfide	Sodium Thiosulfate	Sodium Chloride	Lignin See Pg 7 on Attachment #2	Cellulose See Pg 7 on Attachment #2	Extractive See Pg 7 on Attachment #2				Remarks
	008	1-16-2014 2:20																			0.8.1.9
	009	1-16-2014 2:26 pm																			
	010	1-16-2014 3:45 pm																			
																					Field pH calibration
		Container Type				G															on ______ @ ______
		Preservative																			Buffer:

G = Glass (circled) P = Plastic V = VOA vials H = HCl to pH2 T = Sodium Thiosulfate
NO = none S = Sulfuric acid pH2 N = Nitric acid pH2 B = NaOH to pH12 Z = Zinc acetate

Turnaround Time Requested: (Please circle)
NORMAL (circled) or EXPEDITED IN ____ DAYS
Expedited results requested by: ____
Who should AIC contact with questions: Rod Eddy
Phone: 318-535-5024 Fax: 318-387-7143
Report Attention to: Rod Eddy
Report Address to: Pulpmill Services
357 Fontana, Rd
Monroe, LA 71203

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	1-17-14 1:50pm		
Relinquished By:	Date/Time	Received in Lab By:	Date/Time
		[signature]	1-17-14 1:50pm

Comments:

Pulpmill Services Inc.

January 17, 2014

Steve Bradford
American Interplex Corporation
8600 Kanis Rd
Little Rock, AR 72204-2322

RE: Samples for Testing (spent black liquor)

Mr. Bradford;

As we discussed yesterday on the phone, I am delivering for testing a total of 10 sample jars. 9 are soil samples and one is liquid which was taken from the drum where the product was that resulted in the incident.

I have included the MSDS (labeled #1) for Black Liquor and if you see anything listed in it that I have not requested testing for, please include that in your testing process. I have also included a report produced by the American Forest & Paper Association for your reference and or use (labeled #2). I have highlighted portions of each that are important to this testing.

Please call Mary Gates at 318-325-4351 for a credit card number to pay for the testing.

You may contact me should you have any questions or need anything else in the process.

Sincerely.

Rod Eddy, Director of Safety

Train, Equip, Evaluate

357 Fontana Road, Monroe, LA 71203

AFPA

AMERICAN FOREST & PAPER ASSOCIATION

GROWING WITH AMERICA SINCE 1861

AR 201- 12936

#2

January 29, 2001

Administrator
US Environmental Protection Agency
PO Box 1473
Merrifield, VA 22116

Attention: Chemical Right-to-Know Program

Dear Administrator:

Please find enclosed a Microsoft Word document Test Plan for Spent Pulping Liquor (CAS No. 66701-92-9) being submitted for the HPV Challenge Program, AR-201, on behalf of the American Forest & Paper Association HPV Work Group (Consortium Registration #

If you have any questions regarding the Test Plan, please call me at 202/463-2587 (Fax: 202/463-2423; e-mail: John_Festa@afandpa.org).

Sincerely,

John L. Festa, Ph.D
Senior Scientist

Enclosure

RECEIVED
OPPT CBIC
2001 JAN 31 PM 1:20

MR 43852

AR 201-12936A

HIGH PRODUCTION VOLUME (HPV) CHEMICAL CHALLENGE PROGRAM

TEST PLAN

for

SPENT PULPING LIQUOR

CAS No. 66071-92-g

Submitted to the US EPA for Review and Public Comment

BY

The American Forest & Paper Association
HPV Work Group

Consortium Registration #

Table of Contents

Spent Pulping Liquor Test Plan

Plain English Summary

AF&PA is sponsoring the HPV chemical, "sulfite liquors and cooking liquors, spent" (CAS No. 66071-92-g) (commonly referred to as "spent pulping liquor"). Spent pulping liquor is a byproduct of processing (or "cooking") wood chips to remove the wood pulp to manufacture paper. The vast majority of spent pulping liquor is recycled for chemical or energy recovery at the production site. Spent pulping liquor may be traded between mills for these uses. A limited number of facilities transfer spent pulping liquor off-site for use in other processes. Exposure to humans or the environment is not expected to occur, except in cases of accidental release.

Spent pulping liquor is a complex mixture. It is corrosive, with a pH ranging from approximately 11.5 to 13.5. Spent pulping liquor is classified as a corrosive liquid under Department of Transportation regulations and labeled as such.

The composition of the complex mixture known as spent pulping liquor is highly variable, depending on several factors. These factors include the process and wood species used to manufacture the wood pulp, the type of end product for which the pulp is intended, the composition of the cooking liquor, and the type of digester equipment used in pulping. After reviewing volume, commercial use, and potential for human and environmental exposure from each pulping process, strong black liquor from an elemental-chlorine-free kraft process using a mixture of hardwood and softwood was selected as the most appropriate test material. More detailed justification for selection of this material is presented in the test plan.

While information is available about the chemistry and certain characteristics of spent pulping liquor, including its pH, there are essentially no data available on the required HPV/SIDS endpoints for spent pulping liquor. (Thus, there are no robust summaries accompanying this proposed test plan.) The lack of test data is not surprising in view of the corrosiveness of spent pulping liquor and that it is a byproduct that is almost always recycled at the production site and has only limited commercial use. Moreover, there is no analytical method for measuring spent pulping liquor given that it is a complex mixture of hundreds of different constituents.

Although the likelihood of human or environmental exposure to spent pulping liquor is extremely low, AF&PA has carefully reviewed the HPV test battery to determine whether these tests can and should be performed. The test plan explains in detail the following conclusions:

Physicochemical Properties

- AF&PA will test the boiling point and vapor pressure of spent pulping liquor.
- Data on the pH of spent pulping liquor is already available.
- Determination of the melting point is not applicable because the material is a liquid.
- Certain physical and chemical property tests (water solubility, octanol-water partitioning coefficient, pKa and adsorption/desorption to soil) were designed for single pure materials and will not yield valid results given the complexity of the spent pulping liquor mixture. Hence, it is impossible to obtain a single value representing the nature of the mixture from a range of values from the many constituents of this mixture. These tests therefore will not be performed. In addition, none of these endpoints can be measured since an analytical method for spent pulping liquor is not available.

Environmental fate

- Testing for photodegradation requires measurement of the degradation products of the test material. This test cannot be undertaken because the complexity of the spent pulping liquor mixture is such that an analytical method for spent pulping liquor is not available.
- With respect to biodegradation, the caustic nature of the test material would adversely affect the bacteria in a biodegradation test before degradation could occur. However, the test protocol allows for neutralization. It is likely that neutralization will alter the composition of the material, and thus the test would have questionable relevance. However, because this test can be performed, AF&PA will undertake the biodegradation test.
- Hydrolysis as a function of pH testing is designed to test pure substances at environmentally relevant pH levels from 4-9. This test does not apply to spent pulping liquor because it is an alkaline, complex mixture. In addition, this endpoint cannot be measured since an analytical method for spent pulping liquor is not available.

Ecotoxicity

- Tests of aquatic toxicity (fish and invertebrates) and toxicity to algae will be performed on spent pulping liquor. In order to conduct these tests, the test substance will have to be neutralized, which will change the composition of the test material, because different constituents will precipitate out of solution at different pH levels. Thus, the results are likely to be of limited relevance. Nevertheless, AF&PA will undertake the tests because OECD guidelines contemplate testing under neutralized conditions; and because aquatic testing

can be performed without issues of animal welfare that apply to tests using warm-blooded animals.

Health Effects

- Spent pulping liquor is very alkaline in nature, with a pH ranging from 11.5 to 13.5. It is known that exposure to highly corrosive materials induces pain in both humans and animals. Corrosive materials can cause severe ulcerations or necrosis (cell death) at the point of contact, i.e., the esophagus or gastric mucosa (stomach lining) when the test material is administered orally.

- OECD guidelines provide that testing that causes pain in laboratory animals as a result of corrosive effects should not be undertaken. Recent OECD and EPA statements support this conclusion, and the Animal Welfare Act similarly proscribes testing that inflicts pain on animals. Dilution of spent pulping liquor in order to perform the tests would alter the fundamental nature of the test material, as different constituents precipitate out of the solution at different pH levels. Accordingly, mammalian testing with spent pulping liquor will not be conducted.

- In any event, the results of any mammalian testing would be related to the well established, but non-specific corrosive effects of high pH compounds. Ample data exist on other compounds to document the effects of high pH on humans and animals. For this reason, mammalian testing of spent pulping liquor is unnecessary.

- AF&PA will conduct in vitro (test tube) genotoxicity testing on spent pulping liquor. It will be necessary to neutralize the test material in order to bring it to a pH that is compatible with survival of the test organisms in order to perform the testing. This will affect the composition of the material and the results therefore may not represent the original substance. However, AF&PA will undertake the testing in the spirit of the HPV program.

AF&PA will proceed with the proposed testing – including boiling point, vapor pressure, biodegradation, ecotoxicity (fish, aquatic invertebrates and algae) and *in vitro* genotoxicity – following receipt of and response to public comments. Given that no mammalian testing will be performed, there is no need to defer the proposed testing program.

List of AF&PA HPV Consortium Members

The American Forest & Paper Association HPV Consortium includes the following companies:

Abitibi Consolidated
Alliance Forest Products
Blue Ridge Paper Products
Boise Cascade Corporation
Bowater, Inc.
Buckeye Technologies, Inc.
Eastern Pulp and Paper, Inc.
Finch, Pruyn & Company, Inc.
Georgia-Pacific Corporation
Greif Bros. Corporation
Gulf States Paper Corporation
Inland Paperboard and Packaging Company
International Paper Company
Longview Fi bre Company
Louisiana-Pacific Corporation
Mead Corporation
P.H. Glatfelter Company
Packaging Corporation of America
Port Townsend Paper Corporation
Potlatch Corporation
Rayonier
Rivet-wood International Corporation
Smurfit-Stone Container Corporation
St. Laurent Paperboard Inc.
Stora Enso North America
Westvaco Corporation
Weyerhaeuser Company
Willamette Industries, Inc.

Spent Pulping Liquor Test Plan

I. Description of Spent Pulping Liquor and Rationale for Selection of Test Material

AF&PA is sponsoring the HPV chemical, "sulfite liquors and cooking liquors, spent" (CAS No. 66071-92-g). This CAS number, also referred to as "spent pulping liquors," includes the liquors resulting from a variety of pulping processes within the pulp and paper industry.[1] Such processes include kraft, soda, sulfite, semichemical, and chemi-thermomechanical.

Almost all of the spent pulping liquor generated by any of these processes is recycled for chemical and energy recovery. Controlled management of the material minimizes any potential for human or environmental exposure from these activities.

Spent pulping liquor is variable in its composition, depending upon the wood species used to manufacture the wood pulp, the composition of the cooking liquor, and the type of digester equipment used in pulping, and the type of end product for which the pulp is intended. Using Agency guidance, AF&PA has selected strong black liquor from the kraft process at an elemental-chlorine-free mill using a mixture of hardwood and softwood as its test material for the HPV program, as described further below.

EPA guidance suggests that testing the substance produced at the highest volume would be appropriate. (EPA Guidance, *Guidance for "What to Test" for the WV Challenge*, draft dated 2/08/99.) Agency guidance also suggests that the selected test material should be "representative" of the sponsored CAS number. Strong black liquor from a bleached, elemental-chlorine-free (ECF) kraft process using a mixture of hardwood and softwood is most representative of spent pulping liquor in the pulping industry for several reasons:

---

[1] Spent pulping liquors are defined as:

> the aqueous solution resulting from the reaction of lignocellulosic substances (wood or other agricultural fiber sources) with one or more pulping chemicals including those used in the kraft, sulfite, semichemical or other pulping processes. Composition is highly variable and includes excess pulping chemicals, dissolved and degraded cellulose, hemicellulose and lignin.

TSCA Chemical Substance Inventory, 1990 Supp., App. A

Volume – The kraft pulping process is by far the most significant process. Annual pulp production capacity from the kraft process is over 57 million tons. Annual pulp production for the other processes fall well below this, in the range of 1-5 million tons per year. Consequently, there is more spent liquor generated by the kraft process than by all other processes combined.

Potential for ***Human/Environmental*** Exposure – Virtually all spent pulping liquor of any kind is recycled for chemical and energy recovery. The vast majority thus remains on-site, with two very minor exceptions.

- An extremely small percentage of spent pulping liquor is transferred via pipeline to adjacent plants for lignin extraction or dimethyl sulfide extraction. Remaining spent pulping liquor is then returned to the pulp mill to be recycled for chemical and energy recovery.

- Strong black liquor may be transported by truck to other pulping facilities that use it for chemical and energy recovery.

While potential for exposure to spent pulping liquors is minimal, accidental spill within a mill or during transportation represents the most plausible source of environmental exposure. (When black liquor is recycled or transported, some water is typically removed, and the material is therefore referred to as "strong black liquor." Strong black liquor has higher pH than weak black liquor, and thus would be expected to be on the higher end of the range given in Material Safety Data Sheets for black liquor.)

Representative of Industry Practice – Kraft black liquor from a pulping process using a mixed blend of hardwood and softwood, and elemental chlorine free (ECF) bleaching is most representative of current industry practices. Most mills produce both softwood and hardwood pulp at a single location. Spent pulping liquor most often exists as a blend from processing both hardwood and softwood. In addition, United States production of bleached pulp is greater than unbleached pulp, and ECF is the technology basis for recent water regulations for bleached kraft pulp mills.

Accordingly, the material to be used for testing of spent pulping liquor will be spent strong black liquor taken from an ECF bleached kraft mill that uses a mixture of hardwood and softwood. This will provide the most appropriate material to represent CAS No. 66071-92-9, spent pulping liquor.

II. Chemical Composition of Spent Pulping Liquor

A. Kraft Black Liquor Composition

Strong black liquor contains between 50 and 70% solids, with the remainder being water. The solids are comprised of a complex mixture of both inorganic and organic constituents.

1. Inorganic Constituents

The inorganic constituents in black liquor are derived from the cooking liquor which is used to pulp the wood chips, and are comprised of sodium hydroxide (NaOH), sodium sulfide (Na_2S), sodium carbonate (Na_2CO_3), sodium sulfate (Na_2SO_4), sodium thiosulfate, ($Na_2S_2O_3$), and sodium chloride (NaCl). Collectively, inorganic salts constitute between 18 and 25% of the solids in black liquor.

2. Organic Constituents

The organic compounds found in black liquor are derived from wood. They are either 1) natural wood extractives (or their reaction products) that are released as a result of the pulping process, or 2) materials formed through the reactions of the pulping liquors with the lignin or cellulose components of wood. Therefore, the compounds can be classified as lignin derived, cellulose derived, or extractives derived. Typical content ranges in kraft liquor are:

- Lignin derived (39-54%; primarily consisting of polyaromatic macromolecules with lesser amounts of low molecular weight alcohols, aldehydes and simple phenolic compounds such as phenol, p-methyl phenol, catechol and guaiacol),
- Cellulose derived (2535%; primarily a mixture of carboxylic acids such as formic, acetic, glycolic, lactic and glucoisosaccharinic), and
- Extractive derived (3-5%; primarily resin acids and fatty acids which are converted to salts at the high pH of the mixture).

In sum, spent pulping liquor can have hundreds of consituents.

B. Acid-Base Properties of Black Liquor

Black liquor is distinctly alkaline (caustic), with Ph ranging from 11.5 to 13.5 (Various company Material Safety Data Sheets.) Due to the presence of three distinct buffer systems, black liquor is highly buffered. These buffer systems, and their pKa values (representing their potential for dissociation) are:

Sulfide buffer: $Na_2S + H_2O \rightarrow NaHS + NaOH$ $pKa \cong 13\text{-}13.5$

Phenolic buffer: R-OH + NaOH + H_2O pKa ≅ 9.4-I 0.8

Carbonate buffer: $Na_2CO_2 + H_2O \rightarrow NaHCO_3 + NaOH$ pKa ≅ 10.2

The high alkalinity is largely responsible for solubilizing the various organic constituents. If the pH is reduced, various organic constituents will precipitate, beginning with the components with low pKa values (e.g. the phenolics) and eventually those with higher pKa values (e.g. the carboxylic acids). Thus, the soluble component would vary as pH is reduced. Consequently, if the pH is adjusted in order to perform certain tests, the nature and composition of the test material will necessarily change.

C. Lack of Analytical Method

There is no analytical methodology available to measure spent pulping liquor. Spent pulping liquor is a mixture of numerous known, tentatively identified and unidentified components, and thus only some components would be available for calibration purposes. Given the complexity of the mixture, it is not currently possible to characterize spent pulping liquor as necessary to undertake a number of the SIDS endpoints. The HPV program does not encompass the kind of research program that would be necessary in order to develop an appropriate analytical method with sufficient sensitivity, if indeed it is even possible to do so. Consequently, because of the lack of an appropriate analytical methodology and the practical impossibility of developing such a method, many of the required SIDS endpoints that are part of the HPV Challenge program cannot be undertaken.

III. Review of Existing Data and Development of Test Plan Rationale for SIDS Endpoints

A. Physicochemical Data

Except for pH, physicochemical data for spent pulping liquor that satisfy the data evaluation criteria described in EPA guidance documents were not found. Most of the required physicochemical properties tests in the SIDS battery are designed for a single, pure chemical. Due to the fact that spent pulping liquor is an extremely complex mixture of inorganic and organic constituents, many of the common physicochemical parameters are inapplicable.

If one were to attempt these tests, the numerous different constituents in spent pulping liquor will respond to most physicochemical tests differently. The resulting wide ranges of values for the individual constituents would not represent the characteristics of the mixture.

The problem is further exacerbated by the lack of a suitable analytical procedure to measure spent pulping liquor. Absent a suitable analytical method for

measuring the spent pulping liquor, some of the tests cannot be performed. For these reasons, many of the SIDS physicochemical tests in this category cannot be performed or would not produce useful pKa information. Tests that are inappropriate for this material include pKa, water solubility, octanol-water partitioning coefficient (K_i), and adsorption/desorption to soil. AF&PA will test the boiling point and vapor pressure of spent pulping liquor. Data on pH of spent pulping liquor are already available, and determination of the melting point is not necessary since the material is a liquid. The following narrative explains the rationale for this testing plan in more detail.

1. Water Solubility

Spent pulping liquor is a complex mixture of inorganic and organic salts suspended or dissolved in water. A test for water solubility could be performed on the test material, but it would result in multiple values for individual constituents. Due to the lack of a suitable analytical method for the complex mixture, it is not feasible to measure the water solubility for the mixture.

As noted above, strong black liquor contains 50-70% solids. At solids contents below 50%, the inorganic salts contained in spent pulping liquor are completely dissolved in the aqueous portion of the liquor. Often, the 50% solids point (the point where the salts start precipitating) is referred to as the "solubility limit." At solids levels greater than 75%, Burkeite ($2Na_2So_4 \cdot Na_2CO_3$) is the only salt that precipitates. Thus, between 50 to 75% solids, spent pulping liquor is essentially a water/organic-inorganic suspension (Adams et al. 1997).

2. Melting Point and Boiling Point

Because spent pulping liquor is a liquid under normal conditions, it is not necessary to determine the melting point. However, AF&PA will test to determine the boiling point.

3. Octanol:Water Partition Coefficient

Given the numerous organic and inorganic constituents in kraft black liquor, any assay used to estimate the partitioning properties would yield a range of values reflecting this complex mixture. Such values would be meaningless and would provide little, if any, useful information concerning the material. Consequently, the K_{ow} will not be conducted on this mixture.

4. pH

Already available data show that the pH of kraft black liquor ranges from 11.5 to 13.5 (various company Material Safety Data Sheets).

5. pKa

Because pKa determinations apply to specific compounds, this endpoint cannot be conducted on spent pulping liquor, which is a complex mixture.

6. Adsorption/Desorption to Soil

Due to the fact that black liquor is an extremely complex mixture of inorganic and organic constituents, the test for adsorption/desorption to soil would have little, if any, meaning. The different constituents will adsorb/desorb to soil differently, resulting in a wide range of values. Moreover, because there is no analytical method for the spent pulping liquor mixture, the adsorption/desorption to soil of spent pulping liquor will not be determined.

7. Density

The density of spent pulping liquor will be determined.

Summary: The boiling point, vapor pressure, and density of kraft black liquor will be determined. Data are already available on pH. Testing will not be conducted for pKa, water solubility, octanol-water partitioning coefficient, or adsorption/desorption to soil.

B. Environmental Fate & Pathways

Data on environmental fate for spent pulping liquor that satisfy the data evaluation criteria described in EPA guidance documents were not found. Described below is the feasibility of conducting the required SIDS testing for the fate and transport endpoints.

1. Photodegradation

The practicability of performing this test is hindered by the lack of an analytical procedure to measure spent pulping liquor. A test of photodegradation cannot be performed, since the composition and quantity of the test material before and after exposure to sunlight cannot be measured.

2. Hydrolysis

With respect to the hydrolysis test, the required test (OECD 111) is designed to measure hydrolysis (stability in water) of pure compounds at several pH levels (4-9) that are likely to be found in the environment. Thus, the test is not applicable to the alkaline, complex mixture of spent pulping liquor. In addition, this endpoint cannot be measured since an analytical method for spent pulping liquor is not available.

3. Biodegradation

An additional problem is presented for biodegradation testing. The high pH of the test material would not be compatible with survival of the bacteria, thus preventing the possible degradation of the material. However, the test guidelines allow neutralization of materials in order to conduct this test. While neutralization will alter the composition of the test material because various constituents will precipitate out as the pH changes, the test can be performed. An analytical method for spent pulping liquor is not necessary. AF&PA therefore proposes to conduct biodegradation testing, even though the results must be interpreted with caution.

Summary: Due to the complex nature of spent pulping liquor and the attendant lack of a practical analytical methodology for spent pulping liquor, the hydrolysis and photodegradation tests cannot be performed. Biodegradation testing will be performed after the test material is neutralized, although results will likely be of limited relevance.

C. Ecotoxicity Tests

Data on the SIDS ecotoxicity endpoints (acute toxicity to fish and aquatic invertebrates and toxicity to plants) that satisfy the data evaluation criteria described in EPA guidance documents were not found for spent pulping liquor.

The Animal Welfare Act does not apply to the aquatic test organisms. However, each of the ecotoxicity endpoints must be tested within a narrow pH range (6.5 to 8.5), consistent with maintaining the viability of the test organisms. Due to the high pH of black liquor (i.e., approximately 11.5 to 13.5), the only way that ecotoxicity tests could be conducted would be to neutralize test solutions to the lower pH range.

The latest OECD (#203) guideline suggests that adjustment of the pH with simple acid or alkali (or other suitable buffer) can be done, even though *"this can* cause *sedimentation* and/or degradation *of the* test *substance."* Adjustment of the pH can be carried out in the stock solution or in the media itself, as judged appropriate.

However, in the particular case of spent pulping liquor there is a further complication. Reducing the pH to levels at which the test organisms survive will effectively alter what is in solution. Consequently, whatever constituents remain in the aqueous phase, the resulting mixture would no longer be representative of spent pulping liquor.

Nevertheless, even though the "neutralized" material would not be representative of the chemical CAS number being tested, it could potentially represent a situation in which a spill of the very caustic material is diluted to a lower pH by virtue of accidental discharge into a large water body. Such a scenario is

unlikely. The resulting data would be of limited relevance. However, the test can be accomplished, and OECD guidelines contemplate using neutralized test materials.

Thus, even though the relevance of the results will be highly limited with respect to the potential ecotoxicity of spent pulping liquor, the SIDS ecotoxicity endpoints will be determined to fulfill the spirit of the HPV program.

Summary: Following appropriate adjustments of the pH of spent pulping liquor, this material will be tested for toxicity to fish, daphnia, and algae consistent with the required SIDS ecotoxicity endpoints. Data should be interpreted with caution, however.

D. Human Health Effects

Data on the SIDS human health effects endpoints of acute toxicity, genetic toxicity, repeat dose toxicity, reproductive and developmental toxicity for spent pulping liquor that satisfy the data evaluation criteria described in EPA guidance documents were not found.

However, with the exception of the in *vitro* tests for mutagenicity in Salmonella bacteria and mamallian cells, all of the other human health effects endpoints require the test substance to be administered to animals either by gavage or in the diet. The high pH of the test material in this case would result in immediate corrosive effects in the animals. Not only would useful mammalian toxicity data not be obtained, but the spirit of the HPV program requires that testing in which animals would suffer should not be conducted. Therefore, AF&PA will limit health effects testing to the mutagenicity endpoints and not perform mammalian toxicity tests for spent pulping liquor.

1. Likely Corrosive Effects

Given the extremely high pH of kraft black liquor (approximately 11.5-13.5), it would be impossible to administer such a caustic material to test animals without causing them to suffer. It is well established that highly alkaline material can cause chemical burns. *'Extremely corrosive* and *reactive chemicals may produce immediate coagulative necrosis that results in substantial tissue damage. . . . "* (Casarett & Doull 1997) As a leading occupational medicine text notes: *"Alkalis not only coagulate tissue protein by dessication or salt formation, but they a/so saponify fats and cause liquefaction necrosis."* (Zenz 1994) The severity of the effect will depend on the corrosiveness of the chemical. (Olishifski 1974). OECD's Guidance Document on the Recognition, Assessment, and Use of Clinical Signs as Humane Endpoints for Experimental Animals Used in Safety Evaluation provides that *"If something is known to* cause *suffering in humans, it should be assumed to* cause *suffering in animals."* (OECD 2000).

With a pH in the range of 11.5 to 13.5 (and with the strong black liquor test material generally expected to be at the higher end of this range), spent pulping liquor is clearly corrosive. When shipped, spent pulping liquor is labeled as corrosive (UN1 760 label) under Department of Transportation regulations. Manufacturers of spent pulping liquor comply with OSHA's Hazard Communication Standard, including providing Material Safety Data Sheets for the material. (OSHA defines as corrosive and therefore hazardous those chemicals that cause visible destruction of tissue at the site of contact. (Code of Federal Regulations, OSHA). EPA automatically defines waste as hazardous due to the characteristic of corrosivity if the pH of the material is 12.5 or higher. (Code of Federal Regulations, EPA).

Thus, based on well-known characteristics of any corrosive material, one would expect spent pulping liquor to result in chemical burns. Whether by gavage or via administration in the diet, the high pH of spent pulping liquor is expected to cause severe ulcerations or necrosis at the point of contact, i.e., esophagus or gastric mucosa, when fed to test animals.

2. Pertinent OECD Testing Guidelines

OECD guidelines provide that testing not be carried out when it will cause distress to the animals based on corrosive effects of the test substance:

- As noted in the guidelines for acute toxicity testing (OECD 401), "Dosing test substances in a way known to cause marked pain and distress due to corrosive or irritating properties need not be carried out." Indeed, OECD is currently taking steps to eliminate acute (LD_{50}) testing in light of animal use concerns.

- OECD 420 on acute toxicity further notes that, "doses that are known to cause marked pain and distress, due to corrosive or severely irritant actions, need not be administered."

- Moreover, OECD 422 governing repeat-dose testing provides: *dose /eve/ should be chosen with the aim of inducing toxic effects but not death* nor *obvious suffering."* [Emphasis added] It is not clear that these dual requirements can be satisfied simultaneously with such a corrosive material.

For spent pulping liquor, even small doses would likely result in *"obvious suffering"* of the test animals.

3. Animal Welfare Act and Other Licensing Provisions

The Animal Welfare Act, 7 U.S.C. § 2131, requires that the Secretary of Agriculture set standards governing the humane handling, care, treatment, and transportation of animals by research facilities. The standards should ensure that experimental *procedures "ensure* **that** *animal* **pain** *and distress* **are** *minimized, "* and that the investigator considers *"alternatives to any procedure likely to produce pain to or distress in an experimental animal."*
The regulations are found at 9 C.F.R. Ch. 1. Generally, they require each research facility to ensure that its activities *"avoid or minimize discomfort, distress, and pain to the animals."* 9 C.F.R. § 2.31(d)(i). In its annual report, the research facility must certify that each principal investigator has considered alternatives to *"painful procedures,"* (9 C.F.R. § 2.36), defined as *"any procedure that would reasonably be expected to cause more than slight or momentary pain or distress in a human being to which that procedure* **was** *applied, that is, pain in excess of that caused by injections or other minor procedures. " 9* C.F.R. § 1.1
The Animal Welfare Act thus requires that testing that inflicts pain on the animals is to be carefully scrutinized.

4. Evaluation of Test Feasibility

Applying OECD guidelines and observing relevant provisions for animal welfare, it does not appear that animal testing of spent pulping liquor can reasonably be conducted.

At the pH of this material, primary toxicity is related to the inherent corrosivity of the material. Some of the pertinent OECD test guidelines allow for dilution of the test material used for animal testing. However, in the case of spent pulping liquor, dilution would alter the composition of the material. Thus, the tests of a dilute substance would be addressing a different material - both in composition and because the fundamental corrosive property of the material has been changed. Relevance of testing with such a fundamentally altered substance is highly questionable (and even less potentially applicable than aquatic testing with dilute material). Given the strictures applicable to testing warm-blooded animals, mammalian testing with spent pulping liquor should not be performed.

5. EPA Guidance

The latest guidance from EPA (2000) states: *"In analyzing the adequacy of existing* **data,** *participants* **shall** *conduct a thoughtful, qualitative analysis rather than use a rote checklist approach. Participants may conclude that there is sufficient data, given fhe totality of what is known about a chemical, including human experience, that* **certain** *endpoints need not be tested."*

Given the high pH and corrosivity of this complex mixture, a thoughtful analysis leads to the conclusion that mammalian testing of spent pulping liquor cannot be justified.

6. In Vitro Genotoxicity Testing

The potential for in vitro genotoxicity will be tested in *Salmonella and a mamallian cell* culture, recognizing that the pH will have to be adjusted in order to ensure survival of the test organisms.

Summary: Given the high pH of spent pulping liquor and the certainty of causing animal suffering should this material be administered in order to conduct the required tests, none of the SIDS human health endpoints involving the use of animals will be undertaken. However, AF&PA will subject spent pulping liquor to in vitro genotoxicity testing.

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Zenz, C, Dickerson, O., and Horvath, E., Eds. Occupational Medicine, 3d edition (1994).

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*   Canadian Centre for Occupational Health and Safety         *
* * * * * * * * * * * * * * Issue : 95-1 (February, 1995)      *
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*** IDENTIFICATION ***

MSDS RECORD NUMBER : 637197
PRODUCT NAME(S) : BLACK LIQUOR
DATE OF MSDS : 1993-08-15

*** MANUFACTURER INFORMATION ***

MANUFACTURER : Canadian Pacific Forest Products Limited
ADDRESS : 2001 Neebing Avenue
Thunder Bay Ontario
Canada P7C 4W3
EMERGENCY TELEPHONE NO. : 807-475-2400 613-996-6666 (CANUTEC)

***

DISCLAIMER :
NOTE FROM CANADIAN PACIFIC FOREST PRODUCTS LIMITED: The information contained in this material safety data sheet is offered only as a guide which has been prepared in good faith by technically knowledgeable personnel, and to the best of the knowledge of Canadian Pacific Forest Products Limited is believed to be accurate. Canadian Pacific Forest Products Limited makes no warranty, express or implied, and expressly disclaims all liability for loss, damage or injury, however caused, arising directly or indirectly out of the use of this material safety data sheet.

*** SUPPLIER/DISTRIBUTOR INFORMATION ***

SUPPLIER/DISTRIBUTOR : CANADIAN PACIFIC FOREST PRODUCTS LIMITED
ADDRESS : 1250 Rene-Levesque Boulevard West
Montreal Quebec
Canada H3B 4Y3
Telephone: 514-846-5095

*** MATERIAL SAFETY DATA ***

MATERIAL SAFETY DATA SHEET

BLACK LIQUOR

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SECTION 1: PRODUCT INFORMATION

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PRODUCT IDENTIFIER: Black liquor
SYNONYMS: Spent kraft pulping liquor, strong black liquor
CHEMICAL NAME: Not applicable
CHEMICAL FORMULA: Mixture, CAS NUMBER 66071-92-9
PRODUCT USE: Ingredient in production of waferboard, adhesives

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SECTION 2: HAZARDOUS INGREDIENTS

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HAZARDOUS INGREDIENTS*	PERCENT	CAS NUMBER
Sodium carbonate	30-35	487-19-8
LD50: 4,000 mg/kg oral, rat LC50: Not available		
Sodium hydroxide	2-4	1310-73-2
LD50: 40 mg/kg i.p., mouse LC50: Not available		
Sodium sulfide	0,3	16721-80-5
LD50: 30 mg/kg i.p., rat 18 mg/kg subcutaneous, mouse LC50:		
Sodium sulfate	< or = 1	7757-82-6
LD50: Not available LC50: Not available		
Sodium thiosulfate	< or = 1	7772-98-7
LD50: 5200 mg/kg i,p. mouse LC50: Not available		
Silica (quartz)	< or = 1	14808-60-7
LD50: Not available LC50: Not available		

* Also contains cellulose, hemicellulose, and lignin breakdown products.

SECTION 3: PHYSICAL DATA

PHYSICAL STATE:	Liquid
ODOUR AND APPEARANCE:	Black liquid with rotten egg odour. (Sulphur compounds).
ODOUR THRESHOLD:	Not available
SPECIFIC GRAVITY (water=1):	1,3
VAPOUR PRESSURE:	Not available
VAPOUR DENSITY (air=1):	Not available
EVAPORATION RATE:	Not available
BOILING POINT (deg C):	105-115
FREEZING POINT (deg C):	Not available
pH:	11-13
COEFFICIENT OF WATER/OIL DISTRIBUTION:	Not available
WATER SOLUBILITY (20 deg C):	Not available

SECTION 4: FIRE AND EXPLOSION HAZARDS DATA

CONDITIONS OF FLAMMABILITY:	Not flammable. Will burn at very high temperatures.
MEANS OF EXTINCTION:	Use extinguishing media appropriate to material burning.
FLASH POINT (deg C) & METHOD:	Not applicable
UPPER FLAMMABLE LIMIT (% per volume):	Not applicable

LOWER FLAMMABLE LIMIT (% per volume): Not applicable
AUTO-IGNITION TEMPERATURE (deg C): Not applicable
HAZARDOUS COMBUSTION PRODUCTS: Oxides of carbon and oxides of sulfur
EXPLOSION DATA-SENSITIVITY TO MECHANICAL IMPACT: Not applicable
EXPLOSION DATA-SENSITIVITY TO STATIC DISCHARGE: Not applicable

SECTION 5: REACTIVITY DATA

CHEMICAL INSTABILITY: Not applicable
INCOMPATIBILITY: Aluminum and acids. Contact with acids and oxidizing agents can result in release of potentially lethal concentrations of hydrogen sulfide (H_2S) gas.
HAZARDOUS POLYMERIZATION: Does not occur.
CONDITIONS OF REACTIVITY: Not applicable
HAZARDOUS DECOMPOSITION PRODUCTS: Not applicable

SECTION 6: TOXICOLOGICAL PROPERTIES

ROUTES OF ENTRY: SKIN [ ] INHALATION [X] INGESTION [X]
SKIN CONTACT [X] EYE CONTACT [X]

ACUTE EXPOSURE:
Causes eye and skin irritation and corrosion; respiratory airways irritation; if ingested in large amounts : digestive tract irritation and corrosion, vomiting, diarrhea, circulatory collapsus and death (possible).
Note: Toxicity evaluation of this product was based on sodium carbonate and sodium hydroxide toxicity.
CHRONIC EXPOSURE:
Possibility of dermatitis.
Note: Toxicity evaluation of this product was based on sodium carbonate and sodium hydroxide toxicity.
EXPOSURE LIMITS: Not available
LD50 OF PRODUCT: Not available
LC50 OF PRODUCT: Not available
SENSITISATION TO PRODUCT: Possibility of dermatitis.
CARCINOGENICITY: Not available
TERATOGENICITY: Not available
MUTAGENICITY: Not available
REPRODUCTIVE TOXICITY: Not available
SYNERGISTIC PRODUCTS: Not available

SECTION 7: PREVENTIVE MEASURES

PERSONAL PROTECTIVE EQUIPMENT

GLOVES: Rubber
RESPIRATOR: Use NIOSH/MSHA approved respiratory protection.
EYE PROTECTION: Chemical goggles.
FOOTWEAR: Rubber boots when handling large quantities.
CLOTHING: Rubber suit when handling large quantities.
OTHERS: Remove contaminated clothing immediately and launder before reuse.

ENGINEERING CONTROLS:
Eyewash stations and deluge safety showers nearby Vessels should be washed and ventilated and checked for toxic gas before entry.

LEAK OR SPILL PROCEDURE:
Dike spill with sand or other material. Keep out of sewers or waterways. Pump to approved containers and dispose of in accordance with environmental authorities. Small spills can be washed down with water. Avoid acids as H2S may be generated.
Consult environmental authorities.
WASTE DISPOSAL:
Consult environmental authorities for proper disposal.
HANDLING PROCEDURE:
Avoid contact with skin. Wear safety glasses. Handle with care.
STORAGE REQUIREMENTS:
Keep in a cool, dry and well-ventilated area. Keep in a tightly closed container and away from acid.
SPECIAL SHIPPING INFORMATION:
TDG identification : PIN-UN/NA number 1760
TDG classification : 8 - corrosive liquids (N.O.S.) - Black Liquor

SECTION 8: FIRST AID MEASURES

EYE CONTACT: Immediate and continuous irrigation with running lukewarm water for at least 30 minutes is imperative. Take care not to rinse contaminated water into the unaffected eye. Call a doctor.
SKIN: Wash off in running water or shower for at least 20 minutes. Remove contaminated clothing immediately and launder before reuse. Call a doctor.
INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a doctor.
INGESTION: Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. Have victim drink 240 to 300 ml (8 to 10 oz) of water to dilute material in stomach. If vomiting occurs naturally, rinse mouth and repeat administration of water. Never give anything by mouth to an unconscious person. Call a doctor.

SECTION 9: PREPARATION INFORMATION

PREPARED BY: OCCUPATIONAL ENVIRONMENT SERVICES
TELEPHONE NUMBER: (514) 846-5095
DATE OF PREPARATION: August 15, 1993

M S D S

Canadian Centre for Occupational Health and Safety
Issue : 95-1 (February, 1995)

*** IDENTIFICATION ***

MSDS RECORD NUMBER : 168580

PRODUCT NAME(S) : BLACK LIQUOR
DATE OF MSDS : 1989-01-06
CURRENCY NOTE : MSDS Confirmed Current: 1994-06-01

*** MANUFACTURER INFORMATION ***

MANUFACTURER : BUCKEYE CELLULOSE CORPORATION
ADDRESS : POST OFFICE BOX 8407
MEMPHIS TENNESSEE
U.S.A. 38108
EMERGENCY TELEPHONE NO. : 901-320-8100

***

DISCLAIMER :
NOTE FROM BUCKEYE CELLULOSE CORPORATION: Buckeye Cellulose Corporation makes
no warranties or representations concerning the information in this document. This document neither expands nor alters product usage instructions which are specified in labels and technical data provided for this product by Buckeye Cellulose Corporation.

*** MATERIAL SAFETY DATA ***

DATE 1/6/89
MATERIAL SAFETY DATA SHEET

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SECTION I PRODUCT IDENTIFICATION

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TRADE NAME
BLACK LIQUOR
CAS NO.
66071-92-9
SYNONYMS AND DESCRIPTION
Black liquor is a substance of highly variable alkaline composition produced when wood chips are cooked in the Kraft pulping process. It contains excess pulping chemicals (sodium hydroxide, sodium sulfide), carbonates, sulfates, along with dissolved and degraded cellulose, hemicellulose, and lignins.

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SECTION II HAZARDOUS INGREDIENTS

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MATERIAL OR COMPONENT			CAS NO.	%
Sodium Hydroxide			1310-73-2	Variable 0.4-4.5
	HAZARD DATA:	Irritant, Corrosive		
Sodium Sulfite			7757-82-6	Variable
	HAZARD DATA:	Thermal decomposition releases toxic sulfur oxides		
Sodium Sulfide			1313-82-2	Variable
	HAZARD DATA:	Reacts with strong acids releasing poisonous hydrogen sulfide.		
Sodium Hydrosulfide			16721-80-5	Variable
	HAZARD DATA:	Reacts with strong acids releasing poisonous hydrogen sulfide.		

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SECTION III PHYSICAL DATA

BOILING POINT, 760 MM HG	Variable
SPECIFIC GRAVITY (H2O=1)	Variable
VAPOR DENSITY (AIR=1)	Not available
% VOLATILES BY VOL.	Variable
VAPOR PRESSURE (MM HG)	Not available
SOLUBILITY IN H2O% BY WT	Infinite
EVAPORATION RATE (BUTYL ACETATE = 1)	Not available
pH	Typical Range 10-12
APPEARANCE AND ODOR	Black liquid with rotten egg odor.

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (TEST METHOD) Not available

FLAMMABLE LIMITS IN AIR, % BY VOL. Not available

EXTINGUISHING MEDIA	Not applicable
SPECIAL FIRE FIGHTING PROCEDURES	Not applicable
UNUSUAL FIRE AND EXPLOSION HAZARDS	Not applicable

SECTION V HEALTH AND SAFETY DATA

THRESHOLD LIMIT VALUE None established

EFFECTS OF OVEREXPOSURE

Eye and skin contact can cause serious burns. Possible blindness from eye contact. Will cause serious damage to mouth, throat and stomach if ingested. Inhalation of solution mist may cause upper respiratory tract irritation.

EMERGENCY AND FIRST AID PROCEDURES

EYES:	Flush with water for 15 minutes, get prompt medical attention.
SKIN:	Wash thoroughly with water.
INHALATION:	Remove to fresh air and get medical attention if irritation persists or is severe.
INGESTION:	Do not induce vomiting. Rinse mouth with water. Drink large amounts of water. Get prompt medical attention.

SECTION VI REACTIVITY DATA

STABILITY UNSTABLE [ ] CONDITIONS TO AVOID
STABLE [X] Not applicable

INCOMPATABILITY (MATERIALS TO AVOID)
Contact with acids can result in release of potentially lethal concentrations of hydrogen sulfide gas.
HAZARDOUS DECOMPOSITION PRODUCTS
Thermal decomposition may produce toxic sulfur oxides.
HAZARDOUS MAY OCCUR [ ] CONDITIONS TO AVOID
POLYMERIZATION WILL NOT OCCUR [X] Not applicable

SECTION VII DISPOSAL, SPILL OR LEAK PROCEDURES

WASTE DISPOSAL METHOD
Incinerate or dispose of according to local, state and federal laws and regulations for hazardous substances.
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Contains spills. Pump large spills into appropriate container for future use. Absorb small spills in an absorbent material and dispose of as waste. Small spills may be diluted and flushed to an approved treatment system consistent with laws and regulations. Never neutralize spills with acid or divert to acid-containing sewer. Ventilate area. Report as required to the National Emergency Response Center.

SECTION VIII SPECIAL PROTECTION INFORMATION

VENTILATION REQUIREMENTS
General mechanical ventilation is recommended to control odor if stored inside.
SPECIFIC PERSONAL PROTECTIVE EQUIPMENT None required under normal conditions
RESPIRATORY (SPECIFY IN DETAIL) of handling.

EYE GLOVES
Chemical goggles Impervious gloves.
OTHER CLOTHING AND EQUIPMENT
Aprons, boots, a rubber suit and face shield may be needed when handling large amounts of this material where splash potential exists or the material is at a high temperature. Eyewash fountain and safety shower.

SECTION IX SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING
Avoid eye and skin contact. Store away from acids. Avoid discharge into an acid sewer. Spill protect. Check vessels that have contained Black Liquor for hydrogen sulfide before entering. Consult Plant Environmental Control Department regarding waste disposal and spills.
OTHER PRECAUTIONS

SECTION 313 SUPPLIER NOTIFICATION: This product contains 0.4-4.5% sodium hydroxide, CAS No. 1310-73-2 and 0.6-4.5% sodium sulfate, CAS No. 7757-82-6 which are subject to the reporting requirements under SARA TITLE III, Section 313.

ISN: 168580

Attachment E

PSI Incident Report

Blake, Ann

From: Rod Eddy <REddy@pulpmillservices.com>
Sent: Monday, January 27, 2014 12:55 PM
To: Blake, Ann
Cc: mwebb@idealconst.com; Ronnie Marsh
Subject: Crossett Incident report
Attachments: Ideal_Laydown_PSI_Incident-report.pdf

Ms. Blake, Mr. Webb asked that I send you my field report which is attached to this email. The report remains open because I am awaiting the report from the analysis lab.
Please let me know if there is anything else that you need.

Rod Eddy, Director of Safety
Pulpmill Services, Inc.
Reddy@pulpmillservices.com
318-325-4351 - Office
318-535-5024 – Cell
318-387-7143 - Fax

PULPMILL SERVICES, INC

JOB # N/A

INCIDENT REPORT

THIS FORM IS TO BE COMPLETED BY THE SUPERVISOR OR SAFETY COORDINATOR FOR ALL SIGNIFICANT NEAR MISSES AND/OR INJURIES REQUIRING PROFESSIONAL MEDICAL TREATMENT. THIS FORM TO BE RETURNED TO PULPMILL SERVICES SAFETY DIRECTOR WITHIN 8 HRS FOR FATALITIES AND 24 HRS FOR ALL OTHERS.

INJURED INDIVIDUAL:	MILL/SHOP:
ADDRESS:	AREA WORKING:
	OCCUPATION:
PHONE: CELL:	PPE IN USE: YES NO
AGE:	LIST ALL PPE:

INCIDENT INFORMATION:

Date of Incident: 1-9-2014 Time of Incident: Approx, 10:30 AM

Date of Investigation: 1-10-14 through 1-11-14

Name(s) of Investigator(s):

Description of Incident: (Please be brief and factual. Describe what happened. Do not speculate as to causes or corrective actions.)

A Washer Drum being stored at the Ideal Construction Lay-down yard in Crossett, AR was being prepared for transport to the PSI home office in Monroe, LA – Tracy Crocker and Gary Searcy (Slick) were present to perform work. The drum had what they believed to be water in it and they inserted a trash-pump to dispel the water. Shortly after beginning they noticed that diluted black liquor was being pumped out. According to Tracy Crocker's statement, they immediately shut down the pump.

It was raining at the time and Crocker and Slick left the job site not believing there was any issues with the dispensed water/Black liquor.

At approximately 6:30 PM 1-9-14 Ronnie Marsh received a call from Mike Webb who had received a call from the Ashley County Sherriff around 6:00 PM saying that we had something (oil like) running into the yard next to the equipment yard. Containment and clean up (vacuum truck) started around 7:30 PM with sand bags and 3" containment boom. The initial crew left the site at around midnight.

I received a call at 6:50 AM from Ronnie Marsh advising me of the incident. I left the office at around 7:30 and was on site by 8:30. We were back on site at 7:00 Am on 1-10-14 with a crew of 7 to begin the assessment and clean up. I met with Tawana Miller of the Arkansas Department of Emergency Management when I arrived and we discussed the procedures that were being done to abate the incident. I collected water samples from several locations in both yards to have for analysis. There were no signs of residue around the goat pen, the storage shed or the house except at the side of the car port. Sandbagging and initial clean up began and then we were contacted around 1:25 PM I was advised that the next house down also had some residue. We immediately took the vacuum trailer to that yard and vacuumed up all surface residue that we could see. Several 12 – 14 inch deep holes were dug to allow surface drainage and collection. I walked all the property to assess any further migration of the residue and no more was found. Later that day, Donnie Plunks towing and environmental was called to the site to have a certified HAZMAT abatement team on site to direct and assist in clean up. It started raining again at around 3:00 PM Jarrod Gates with DP Towing and Environmental arrived on site at 6:45. He and I walked the affected areas and evaluated the necessary steps to further contain the residue and then to address clean up. The crew left at around midnight. We were back on site at 7:00 AM 1-11-14.

Ms. Miller from OEM arrived at around 7:10 and her and I walked the area to evaluate the containment. The environmental boom materials that had been placed showed VERY LITTLE residue in them. Meaning that most of what was there was discolored water. When Jarrod Gates arrived we collected water samples and tested for Ph levels.

1. City Tap Water as a base line reading was; 7.2 (neutral)
2. Tate Watt driveway: 7.2 (neutral)
3. Drum – too dark to see any color change, Mr. Gates estimated it to be less than 6.8
4. Near Meeks dog Pen – Again too dark to see Mr. Gates again estimated at less than 6.8

All containment materials were left in place since rain was in the forecast.

1-12,13,14 I had Pam Cheek go to site to make sure no further issues had arose. She left cards for the property owners to let them know we were on site these days.

1-15-14 Pam told me she thought it was still to soggy to get the clean-up crew on site so we didn't rut up the yard.

1-15-14 – I arrived on site to evaluate at around 10:30 to make an evaluation of the ground stability for clean-up. I determined it was in good enough condition to begin clean up and contacted the property owners via text Mr. Watt at 11:05 AM and Ms. Meeks at 11:08 AM. Each indicated that was good news. At approximately 3:10 PM this same day, Ms. Meeks contacted me on the office phone to say "her attorney advised her to not let us clean up anything and she should get her own samples for testing. I advised Ronnie Marsh of this development and he contacted me later that evening around 7:10 PM to say that the Arkansas Department of Environmental Quality would be on site Friday morning at 10:00

1-16-2014 Met with Mr. Lamb (ADEQ) and Ms. Miller (AOEM) on site due to a complaint about the spill by Ms. Meeks one of the land owners. MSDS sheets were provided to all parties. While there Mr. Lamb provided a list of laboratories to have samples analyzed and a total of 9 ground samples were collected and marked and one sample from the contents in the drum. The samples we collected later that same day.

1-17-2014 – The collected samples were delivered to American Interplex Corporation Laboratory in Little Rock, AR.

Investigation remains ongoing awaiting the analysis of the samples provided to American Interplex Corporation Lab.

PULPMILL SERVICES, INC

JOB # N/A

FIRST AID PROVIDED: Yes	If Yes, by whom: N/A
POLICE/FIRE/AMBULANCE: Yes	If yes what dept. Ashley County Sherriff
Were photos taken: Yes X No	If Yes, by whom: Rod Eddy

Attachment F

ADEQ Analytical Report

5301 Northshore Drive
North Little Rock, AR 72118
Telephone: 501-682-0744

Client Report For:	Pulp Mill Services Complaint 2014 0263-0268
Attention:	
Client Address:	
	,
Report Date:	February 06, 2014
LAB ID:	AR14JAN29-08
Comment:	

Approved By:_____ Date:February 06, 2014

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Client: Special Samples
Lab ID: 2014-0263

Client Sample ID: PMS - Drumwasher #1
Collection Date: 1/27/2014 12:37:00 PM
Matrix: Organic

Analyses

Anions by Ion Chromatography ***EPA 9056*** ***Batch: 14020608 Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Fluoride	2980	49.8	0.009		mg/Kg
Bromide	<99.6	99.6	.01		mg/Kg
Chloride	4760	199	0.07		mg/Kg
Sulfate	6530	199	0.04		mg/Kg
Weight	0.352				grams
Volume	35				mL
Dilution Factor	10				
Analyzed By	Chad Carrington				
Analysis Date/Time	02/06/14 09:46				

pH ***EPA 150.1*** ***Batch: 14013006 Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
pH	9.81				SU
Analyzed By	Chad Carrington				
Analysis Date/Time	1/30/2014 15:00				

Percent Solids ***EPA 160.3*** ***Batch: 14020601 Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Percent Solids	100	0.2	0.2		%
Analyzed By	Robert Graddy				
Analysis Date/Time	2/05/2014 16:00				

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Client: Special Samples
Lab ID: 2014-0264

Client Sample ID: PMS - Soil #1
Collection Date: 1/27/2014 1:20:00 PM
Matrix: Soil

Analyses

Anions by Ion Chromatography ***EPA 9056*** ***Batch: 14020608 Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Fluoride	15.5	5.00	0.009		mg/Kg
Bromide	<9.99	9.99	.01		mg/Kg
Chloride	76.3	20.0	0.07		mg/Kg
Sulfate	352	20.0	0.04		mg/Kg
Weight	0.350				grams
Volume	35				mL
Dilution Factor	1				
Analyzed By	Chad Carrington				
Analysis Date/Time	02/05/14 15:15				

pH-Soil ***EPA 9045D*** ***Batch: 14013007 Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
pH	8.3				SU
Analyzed By	Chad Carrington				
Analysis Date/Time	1/30/2014 15:00				

Percent Solids ***EPA 160.3*** ***Batch: 14020601 Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Percent Solids	64.6	0.2	0.2		%
Analyzed By	Robert Graddy				
Analysis Date/Time	02/05/2014 1600				

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Client: Special Samples
Lab ID: 2014-0265

Client Sample ID: PMS - Soil #2
Collection Date: 1/27/2014 1:36:00 PM
Matrix: Soil

Analyses

Anions by Ion Chromatography ***EPA 9056*** ***Batch: 14020608 Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Fluoride	864	25.0	0.009		mg/Kg
Bromide	<49.9	49.9	.01		mg/Kg
Chloride	983	99.8	0.07		mg/Kg
Sulfate	1900	99.8	0.04		mg/Kg
Weight	0.351				grams
Volume	35				mL
Dilution Factor	5				
Analyzed By	Chad Carrington				
Analysis Date/Time	02/05/14 15:30				

pH-Soil ***EPA 9045D*** ***Batch: 14013007 Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
pH	8.98				SU
Analyzed By	Chad Carrington				
Analysis Date/Time	1/30/2014 15:00				

Percent Solids ***EPA 160.3*** ***Batch: 14020601 Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Percent Solids	85.5	0.2	0.2		%
Analyzed By	Robert Graddy				
Analysis Date/Time	02/05/2014 1600				

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Client: Special Samples
Lab ID: 2014-0266

Client Sample ID: PMS - Soil #3 Watt
Collection Date: 1/27/2014 1:45:00 PM
Matrix: Soil

Analyses

Anions by Ion Chromatography ***EPA 9056*** ***Batch: 14020608*** ***Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Fluoride	12.8	4.99	0.009		mg/Kg
Bromide	<9.98	9.98	.01		mg/Kg
Chloride	52.9	20.0	0.07		mg/Kg
Sulfate	157	20.0	0.04		mg/Kg
Weight	0.351				grams
Volume	35				mL
Dilution Factor	1				
Analyzed By	Chad Carrington				
Analysis Date/Time	02/05/14 15:45				

pH-Soil ***EPA 9045D*** ***Batch: 14013007*** ***Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
pH	7.06				SU
Analyzed By	Chad Carrington				
Analysis Date/Time	1/30/2014 15:00				

Percent Solids ***EPA 160.3*** ***Batch: 14020601*** ***Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Percent Solids	77	0.2	0.2		%
Analyzed By	Robert Graddy				
Analysis Date/Time	02/05/2014 1600				

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Client: Special Samples
Lab ID: 2014-0267

Client Sample ID: PMS - Soil #4 Meeks
Collection Date: 1/27/2014 2:00:00 PM
Matrix: Soil

Analyses

Anions by Ion Chromatography ***EPA 9056*** ***Batch: 14020608 Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Fluoride	6.61	5.00	0.009		mg/Kg
Bromide	<9.99	9.99	.01		mg/Kg
Chloride	40.2	20.0	0.07		mg/Kg
Sulfate	88.4	20.0	0.04		mg/Kg
Weight	0.350				grams
Volume	35				mL
Dilution Factor	1				
Analyzed By	Chad Carrington				
Analysis Date/Time	02/05/14 16:15				

pH-Soil ***EPA 9045D*** ***Batch: 14013007 Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
pH	5.39				SU
Analyzed By	Chad Carrington				
Analysis Date/Time	1/30/2014 15:00				

Percent Solids ***EPA 160.3*** ***Batch: 14020601 Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Percent Solids	68.7	0.2	0.2		%
Analyzed By	Robert Graddy				
Analysis Date/Time	02/05/2014 1600				

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Client: Special Samples
Lab ID: 2014-0268

Client Sample ID: PMS - background
Collection Date: 1/27/2014 3:30:00 PM
Matrix: Soil

Analyses

Anions by Ion Chromatography ***EPA 9056*** ***Batch: 14020608 Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Fluoride	<4.98	4.98	0.009		mg/Kg
Bromide	<9.97	9.97	.01		mg/Kg
Chloride	<19.9	19.9	0.07		mg/Kg
Sulfate	24.6	19.9	0.04		mg/Kg
Weight	0.351				grams
Volume	35				mL
Dilution Factor	1				
Analyzed By	Chad Carrington				
Analysis Date/Time	02/05/14 13:31				

pH-Soil ***EPA 9045D*** ***Batch: 14013007 Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
pH	4.70				SU
Analyzed By	Chad Carrington				
Analysis Date/Time	1/30/2014 15:00				

Percent Solids ***EPA 160.3*** ***Batch: 14020601 Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Percent Solids	77.1	0.2	0.2		%
Analyzed By	Robert Graddy				
Analysis Date/Time	02/05/2014 1600				

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Client: Special Samples
Lab ID: 2014-0263

Client Sample ID: PMS - Drumwasher #1
Collection Date: 1/27/2014 12:37:00 PM
Matrix: Organic

Analyses

Metals by ICP ***EPA 3051A/EPA 6020A*** ***Batch: 14020502*** ***Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Aluminum	<200	200	.02		mg/Kg
Antimony	<100	100	0.005		mg/Kg
Arsenic	<10	10	0.0005		mg/Kg
Barium	<100	100	0.002		mg/Kg
Beryllium	<5	5	0.0001		mg/Kg
Cadmium	<10	10	0.0003		mg/Kg
Calcium	<400	400	.04		mg/Kg
Chromium	<10	10	0.0003		mg/Kg
Cobalt	<10	10	0.0005		mg/Kg
Copper	<10	10	0.0005		mg/Kg
Iron	4250	200	.01		mg/Kg
Lead	<10	10	0.0001		mg/Kg
Magnesium	<1000	1000	0.1		mg/Kg
Manganese	16	10	0.0002		mg/Kg
Nickel	<25	25	0.0005		mg/Kg
Potassium	5960	1000	.05		mg/Kg
Selenium	<20	20	0.0005		mg/Kg
Silver	<50	50	0.001		mg/Kg
Sodium	70300	400	.02		mg/Kg
Thallium	<25	25	0.00005		mg/Kg
Vanadium	31.4	25	0.001		mg/Kg
Zinc	<30	30	0.002		mg/Kg
Weight	0.5				grams
Volume	50				mL
Dilution Factor	100				
Analyzed By	Robert Graddy				
Analysis Date/Time	Feb 6 2014 11:24AM				
Prep By					
Prep Date/Time					

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Client: Special Samples
Lab ID: 2014-0264

Client Sample ID: PMS - Soil #1
Collection Date: 1/27/2014 1:20:00 PM
Matrix: Soil

Analyses

Metals by ICP ***EPA 3051A/EPA 6020A*** ***Batch: 14020502 Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Antimony	<10	10	0.005		mg/Kg
Arsenic	1.23	1	0.0005		mg/Kg
Barium	51.0	10	0.002		mg/Kg
Beryllium	1.26	0.5	0.0001		mg/Kg
Cadmium	<1	1	0.0003		mg/Kg
Calcium	3460	40	.04		mg/Kg
Chromium	9.56	1	0.0003		mg/Kg
Cobalt	1.39	1	0.0005		mg/Kg
Copper	2.38	1	0.0005		mg/Kg
Lead	8.82	1	0.0001		mg/Kg
Magnesium	2050	100	0.1		mg/Kg
Manganese	520	1	0.0002		mg/Kg
Nickel	3.6	2.5	0.0005		mg/Kg
Potassium	2700	100	.05		mg/Kg
Selenium	<2	2	0.0005		mg/Kg
Silver	<5	5	0.001		mg/Kg
Sodium	8330	40	.02		mg/Kg
Thallium	<2.5	2.5	0.00005		mg/Kg
Vanadium	18.8	2.5	0.001		mg/Kg
Zinc	57.5	3	0.002		mg/Kg
Weight	0.5				grams
Volume	50				mL
Dilution Factor	10				
Analyzed By	Robert Graddy				
Analysis Date/Time	Feb 5 2014 11:13AM				
Prep By					
Prep Date/Time					

Metals by ICP ***EPA 3051A/EPA 6020A*** ***Batch: 14020502 Run: 2***

	Result	Reporting Limit	MDL	Qual	Unit

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Aluminum	14600	200	.02	mg/Kg
Iron	13600	200	.01	mg/Kg
Weight	0.5			grams
Volume	50			mL
Dilution Factor	100			
Analyzed By	Robert Graddy			
Analysis Date/Time	Feb 5 2014 10:27AM			
Prep By				
Prep Date/Time				

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Client: Special Samples
Lab ID: 2014-0265

Client Sample ID: PMS - Soil #2
Collection Date: 1/27/2014 1:36:00 PM
Matrix: Soil

Analyses

Metals by ICP ***EPA 3051A/EPA 6020A*** ***Batch: 14020502*** ***Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Antimony	<10	10	0.005		mg/Kg
Arsenic	2.61	1	0.0005		mg/Kg
Barium	114	10	0.002		mg/Kg
Beryllium	0.865	0.5	0.0001		mg/Kg
Cadmium	<1	1	0.0003		mg/Kg
Calcium	4080	40	.04		mg/Kg
Chromium	18.6	1	0.0003		mg/Kg
Cobalt	3.66	1	0.0005		mg/Kg
Copper	9.19	1	0.0005		mg/Kg
Lead	21.4	1	0.0001		mg/Kg
Magnesium	1840	100	0.1		mg/Kg
Manganese	480	1	0.0002		mg/Kg
Nickel	7.8	2.5	0.0005		mg/Kg
Potassium	2850	100	.05		mg/Kg
Selenium	<2	2	0.0005		mg/Kg
Silver	<5	5	0.001		mg/Kg
Sodium	15700	40	.02		mg/Kg
Thallium	<2.5	2.5	0.00005		mg/Kg
Vanadium	26.4	2.5	0.001		mg/Kg
Zinc	287	3	0.002		mg/Kg
Weight	0.5				grams
Volume	50				mL
Dilution Factor	10				
Analyzed By	Robert Graddy				
Analysis Date/Time	Feb 5 2014 11:20AM				
Prep By					
Prep Date/Time					

Metals by ICP ***EPA 3051A/EPA 6020A*** ***Batch: 14020502*** ***Run: 2***

	Result	Reporting Limit	MDL	Qual	Unit

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Aluminum	18200	200	.02	mg/Kg
Iron	14500	200	.01	mg/Kg
Weight	0.5			grams
Volume	50			mL
Dilution Factor	100			
Analyzed By	Robert Graddy			
Analysis Date/Time	Feb 5 2014 10:34AM			
Prep By				
Prep Date/Time				

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
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501-682-0955

Client: Special Samples
Lab ID: 2014-0266

Client Sample ID: PMS - Soil #3 Watt
Collection Date: 1/27/2014 1:45:00 PM
Matrix: Soil

Analyses

Metals by ICP ***EPA 3051A/EPA 6020A*** ***Batch: 14020502 Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Antimony	<10	10	0.005		mg/Kg
Arsenic	6.81	1	0.0005		mg/Kg
Barium	64.8	10	0.002		mg/Kg
Beryllium	0.769	0.5	0.0001		mg/Kg
Cadmium	<1	1	0.0003		mg/Kg
Calcium	3090	40	.04		mg/Kg
Chromium	41.2	1	0.0003		mg/Kg
Cobalt	4.68	1	0.0005		mg/Kg
Copper	18.0	1	0.0005		mg/Kg
Magnesium	1480	100	0.1		mg/Kg
Manganese	570	1	0.0002		mg/Kg
Nickel	8.0	2.5	0.0005		mg/Kg
Potassium	1030	100	.05		mg/Kg
Selenium	<2	2	0.0005		mg/Kg
Silver	<5	5	0.001		mg/Kg
Sodium	1160	40	.02		mg/Kg
Thallium	<2.5	2.5	0.00005		mg/Kg
Vanadium	32.8	2.5	0.001		mg/Kg
Zinc	82	3	0.002		mg/Kg
Weight	0.5				grams
Volume	50				mL
Dilution Factor	10				
Analyzed By	Robert Graddy				
Analysis Date/Time	Feb 5 2014 11:26AM				
Prep By					
Prep Date/Time					

Metals by ICP ***EPA 3051A/EPA 6020A*** ***Batch: 14020502 Run: 2***

	Result	Reporting Limit	MDL	Qual	Unit
Aluminum	12900	200	.02		mg/Kg

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Iron	19400	200	.01	mg/Kg
Lead	87.2	10	0.0001	mg/Kg
Weight	0.5			grams
Volume	50			mL
Dilution Factor	100			
Analyzed By	Robert Graddy			
Analysis Date/Time	Feb 5 2014 10:40AM			
Prep By				
Prep Date/Time				

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Client: Special Samples
Lab ID: 2014-0267

Client Sample ID: PMS - Soil #4 Meeks
Collection Date: 1/27/2014 2:00:00 PM
Matrix: Soil

Analyses

Metals by ICP ***EPA 3051A/EPA 6020A*** ***Batch: 14020502 Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Antimony	<10	10	0.005		mg/Kg
Arsenic	2.62	1	0.0005		mg/Kg
Barium	85.0	10	0.002		mg/Kg
Beryllium	<0.5	0.5	0.0001		mg/Kg
Cadmium	<1	1	0.0003		mg/Kg
Calcium	981	40	.04		mg/Kg
Chromium	20.4	1	0.0003		mg/Kg
Cobalt	3.00	1	0.0005		mg/Kg
Copper	11.0	1	0.0005		mg/Kg
Lead	19.3	1	0.0001		mg/Kg
Magnesium	910	100	0.1		mg/Kg
Manganese	300	1	0.0002		mg/Kg
Nickel	5.6	2.5	0.0005		mg/Kg
Potassium	1120	100	.05		mg/Kg
Selenium	<2	2	0.0005		mg/Kg
Silver	<5	5	0.001		mg/Kg
Sodium	314	40	.02		mg/Kg
Thallium	<2.5	2.5	0.00005		mg/Kg
Vanadium	23.4	2.5	0.001		mg/Kg
Zinc	41.7	3	0.002		mg/Kg
Weight	0.5				grams
Volume	50				mL
Dilution Factor	10				
Analyzed By	Robert Graddy				
Analysis Date/Time	Feb 5 2014 11:33AM				
Prep By					
Prep Date/Time					

Metals by ICP ***EPA 3051A/EPA 6020A*** ***Batch: 14020502 Run: 2***

	Result	Reporting Limit	MDL	Qual	Unit

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Aluminum	12600	200	.02	mg/Kg
Iron	9800	200	.01	mg/Kg
Weight	0.5			grams
Volume	50			mL
Dilution Factor	100			
Analyzed By	Robert Graddy			
Analysis Date/Time	Feb 5 2014 10:47AM			
Prep By				
Prep Date/Time				

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Client: Special Samples
Lab ID: 2014-0268

Client Sample ID: PMS - background
Collection Date: 1/27/2014 3:30:00 PM
Matrix: Soil

Analyses

Metals by ICP ***EPA 3051A/EPA 6020A*** ***Batch: 14020502 Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Aluminum	1930	20	.02		mg/Kg
Antimony	<10	10	0.005		mg/Kg
Arsenic	2.82	1	0.0005		mg/Kg
Barium	29.5	10	0.002		mg/Kg
Beryllium	<0.5	0.5	0.0001		mg/Kg
Cadmium	<1	1	0.0003		mg/Kg
Calcium	259	40	.04		mg/Kg
Chromium	15.7	1	0.0003		mg/Kg
Cobalt	21.0	1	0.0005		mg/Kg
Copper	2.77	1	0.0005		mg/Kg
Lead	20.2	1	0.0001		mg/Kg
Magnesium	<100	100	0.1		mg/Kg
Manganese	290	1	0.0002		mg/Kg
Nickel	9.7	2.5	0.0005		mg/Kg
Potassium	<100	100	.05		mg/Kg
Selenium	<2	2	0.0005		mg/Kg
Silver	<5	5	0.001		mg/Kg
Sodium	<40	40	.02		mg/Kg
Thallium	<2.5	2.5	0.00005		mg/Kg
Vanadium	16.9	2.5	0.001		mg/Kg
Zinc	12.5	3	0.002		mg/Kg
Weight	0.5				grams
Volume	50				mL
Dilution Factor	10				
Analyzed By	Robert Graddy				
Analysis Date/Time	Feb 5 2014 11:39AM				
Prep By					
Prep Date/Time					

Metals by ICP ***EPA 3051A/EPA 6020A*** ***Batch: 14020502 Run: 2***

	Result	Reporting	MDL	Qual	Unit

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

		Limit		
Iron	8740	200	.01	mg/Kg
Weight	0.5			grams
Volume	50			mL
Dilution Factor	100			
Analyzed By	Robert Graddy			
Analysis Date/Time	Feb 5 2014 10:53AM			
Prep By				
Prep Date/Time				

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Analytical Quality Control Results Report

Batch: 14013006	pH - water
LCS	LIMS ID: 14013006-LCS-01

pH - water LCS — Run: 1

Parameter	Result	DL	RL	Accuracy Control	Precision Control
pH (% Recovery)	99.5 %			95 - 105	
Analyzed By	Chad Carrington				
Analysis Date/Time	1/30/2014 15:00				

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Analytical Quality Control Results Report

Batch: 14013007	pH - soil
LCS	LIMS ID: 14013007-LCS-01

pH - soil LCS *Run: 1*

Parameter	Result	DL	RL	Accuracy Control	Precision Control
pH (% Recovery)	99.5 %			95 - 105	
Analyzed By	Chad Carrington				
Analysis Date/Time	1/30/2014 15:00				

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Analytical Quality Control Results Report

Batch: 14020608 — **Anions - soil**

PMS - Drumwasher #1 — **LIMS ID: 2014-0263**

Anions - soil DUP — *Run: 1*

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Fluoride	2970 mg/Kg	8.93	49.6		
Fluoride (RPD)	0.3 %				0 - 20
Bromide	<99.2 mg/Kg	9.92	99.2		
Bromide (RPD)	0 %				0 - 20
Chloride (RPD)	0.5 %				0 - 20
Chloride	4730 mg/Kg	69.5	198		
Sulfate (RPD)	1.2 %				0 - 20
Sulfate	6450 mg/Kg	39.7	198		
Weight	0 grams				
Volume	35 mL				
Dilution Factor	10				
Analyzed By	Chad Carrington				
Analysis Date/Time	02/06/14 10:01				

PMS - Soil #3 Watt — **LIMS ID: 2014-0266**

Anions - soil DUP — *Run: 1*

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Fluoride	13.5 mg/Kg	0.9	4.98		
Fluoride (RPD)	5.1 %				0 - 20
Bromide (RPD)	0 %				0 - 20
Bromide	<9.97 mg/Kg	1	9.97		
Chloride (RPD)	0.3 %				0 - 20
Chloride	53.1 mg/Kg	6.98	19.9		
Sulfate	154 mg/Kg	3.99	19.9		
Sulfate (RPD)	1.6 %				0 - 20
Weight	0 grams				
Volume	35 mL				
Dilution Factor	1				
Analyzed By	Chad Carrington				
Analysis Date/Time	02/05/14 16:00				

MB — **LIMS ID: 14020608-MB-01**

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Anions - soil MB ***Run: 1***

Parameter	*Result*	*DL*	*RL*	*Accuracy Control*	*Precision Control*
Fluoride	<0.05 mg/Kg	0	0.05		
Bromide	<0.1 mg/Kg	0.01	0.1		
Chloride	<0.2 mg/Kg	0.07	0.2		
Sulfate	<0.2 mg/Kg	0.04	0.2		
Weight	1 grams				
Volume	1 mL				
Dilution Factor	1				
Analyzed By	Chad Carrington				
Analysis Date/Time	02/05/14 11:49				

LCS ***LIMS ID: 14020608-LCS-01***

Anions - soil LCS ***Run: 1***

Parameter	*Result*	*DL*	*RL*	*Accuracy Control*	*Precision Control*
Fluoride (% Recovery)	103 %			90 - 110	
Bromide (% Recovery)	105 %			90 - 110	
Chloride (% Recovery)	106 %			90 - 110	
Sulfate (% Recovery)	105 %			90 - 110	
Weight	1 grams				
Volume	1 mL				
Dilution Factor	1				
Analyzed By	Chad Carrington				
Analysis Date/Time	02/05/14 12:04				

ADEQ
ARKANSAS
Department of Environmental Quality

Arkansas Department of Environmental Quality
Chain of Custody
for Compliance or Enforcement Samples

Facility, Project, Complaint Name, Property Owner: Pulp Mill Services/ ~~GP Crossett~~ JAP 1/28/14

AFIN #/ County:

Printed Names of Sampler(s): Chris Krou/Ann Blake

ADEQ Division or Other (Describe): HWD

- ☐ CSI
- ☐ Other Compliance
- ☒ Complaint
- ☐ Fish Kill
- ☐ Other (describe)

Media Code: W = water; G = groundwater; L = liquid (not water); S = soil or solid; E = edible tissue; F = whole fish; B = other

Preservation Code: A = Cool to 4°C; B = Sulfuric Acid; C = Nitric Acid; D = NaOH; E = Sodium Thiosulfate; F = Other (specify)

Sample ID	Date Collected mm/dd//yy	Time Collected hh:mm	Sample Characteristics: Grab	Composite	No. of Containers	Preservation Code	Media Code	Parameters Requested: semivolatile	anions	Total metals	pH	Sample Remarks	Latitude (dd.ddddd)	Longitude (dd.ddddd)	Lab #
Drumwasher #1	1/27/14	12:37	X		7	A	L	X	X	X	X	if metals high then TCLP			
Soil #1	1/27/14	13:20	X		2	A	S	X	X	X	X				
Soil #2	1/27/14	13:30	X		1	A	S	X	X	X	X				
Soil #3 - Watt	1/27/14	13:45	X		1	A	S	X	X	X	X				
Soil #4 - Meeks	1/27/14	14:00	X		1	A	S	X	X	X	X				
Soil - background	1/27/14	15:30	X		1	A	S	X	X	X	X				

Relinquished by	Date	Time	Received by	Date	Time
Relinquished to Laboratory by	**Date**	**Time**	**Received for Laboratory by**	**Date**	**Time**
Ann Blake	1/28/14	9:04 AM	[signature]	1/28/14	9:04

Notes: Liquids are syrupy & heavy sludge

Use back for additional notes and remarks

Attachment G

Photographic Log

Photographs
Taken by
Rod Eddy of PSI

Attachment G

Photographic Log

Photographs
taken by
Rod Eddy of PSI
2/4/14 @ 2:37 p.m.

Attachment H

PSI E-mails

Blake, Ann

From: Rod Eddy <REddy@pulpmillservices.com>
Sent: Wednesday, January 29, 2014 3:58 PM
To: Blake, Ann
Cc: Ronnie Marsh
Subject: RE: American Interplex Report

Ms. Blake,

I will get the pictures put on a flash drive and try to get out in tomorrow's mail. I will be out delivering the lab reports to the property owners but will try to have it done before the end of the day.
As for the name of the vacuum truck company, I am getting that information from the office and will forward as soon as I have it. The contents that were collected by the vacuum truck are in a collection tank on site so it has not been disposed of yet.
Not sure where Mr. Lamb came up with the drum coming out of GP. The drum did come from the Gilman Paper Mill which is no longer in business and we do not have any paperwork on it.
The tarped material was taken to the Ashley County Solid Waste facility 205 East Jefferson, Hamburg, AR Ticket number 121649 I will get a copy of that scanned and will send that to you.

Rod Eddy, Director of Safety
Pulpmill Services, Inc.
Reddy@pulpmillservices.com
318-325-4351 - Office
318-535-5024 – Cell
318-387-7143 - Fax

From: Blake, Ann [mailto:BLAKE@adeq.state.ar.us]
Sent: Wednesday, January 29, 2014 3:45 PM
To: Rod Eddy
Subject: RE: American Interplex Report

Ok, that would be fine.

Ann Blake
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118

As for the other questions, you can e-mail me that information.
Thanks in advance.

From: Rod Eddy [mailto:REddy@pulpmillservices.com]
Sent: Wednesday, January 29, 2014 3:39 PM
To: Blake, Ann
Subject: RE: American Interplex Report

Ms. Blake,

Yes I have several pictures taken at different intervals. The camera was new and the date and time stamp did not record.
The picture file is over 400 MB so I am wondering if it would be better for me to load them to a flash drive and send to you?
Please give me your mailing address.

Rod Eddy, Director of Safety
Pulpmill Services, Inc.
Reddy@pulpmillservices.com
318-325-4351 - Office
318-535-5024 – Cell
318-387-7143 - Fax

From: Blake, Ann [mailto:BLAKE@adeq.state.ar.us]
Sent: Wednesday, January 29, 2014 3:07 PM
To: Rod Eddy; Lamb, John; ashleyoem@sbcglobal.net
Cc: Ronnie Marsh; Krou, Christopher
Subject: RE: American Interplex Report

Mr. Eddy,

On the phone, you mentioned that photographs were taken. Can you please send me the photographs taken and the name of the company used to vacuum up the black liquor. Also I would like to find out where the material in the vacuum truck went for disposal and a copy of the bill of lading. Also, I'd like to find out where the tarped material in the red pull trailer was disposed of as well and a copy of any paperwork to follow. According to John Lamb, he indicated that you had told him the drum washer had been taken out of the Georgia Pacific Crossett Paper Mill some 14 years prior. If this is correct, would you have any paper trail to verify that it came from them? Jim Cutbirth of GP indicated that it came from a Gilman Paper Mill?

From: Rod Eddy [mailto:REddy@pulpmillservices.com]
Sent: Wednesday, January 29, 2014 2:11 PM
To: Blake, Ann; Lamb, John; ashleyoem@sbcglobal.net
Cc: Ronnie Marsh
Subject: American Interplex Report

Ms. Blake, Mr. Lamb, Ms. Miller;
Please find attached the results from American Interplex Corporation Lab regarding the "black liquor" incident on Hancock Rd. Crossett, AR
I added the sample locations on the attached report for reference. If you would like a copy without the reference notes, just let me know and I can forward that to you.
In the report is a copy of all transmittal documents delivered to American Interplex at time of delivery to them for analysis. (MSDS and American Forest & Paper Association report AR 201-12936)
Also incorporated in the attachment is an email from Mr. Bradford with American Interplex today in response to a question I asked him to address.
If I can provide you anything else at this time, please let me know.
I will be hand delivering a copy of this report and correspondence to the home owners tomorrow morning.

Respectfully,

Rod Eddy, Director of Safety
Pulpmill Services, Inc.
Reddy@pulpmillservices.com
318-325-4351 - Office
318-535-5024 – Cell
318-387-7143 - Fax

Blake, Ann

From: Blake, Ann
Sent: Friday, January 31, 2014 10:51 AM
To: 'Rod Eddy'
Cc: Ronnie Marsh; Wilson, Penny
Subject: RE: requested information

Tracking:

Recipient	Delivery	Read
'Rod Eddy'		
Ronnie Marsh		
Wilson, Penny	Delivered: 1/31/2014 10:51 AM	Read: 1/31/2014 10:52 AM

Thank you for the information supplied via email and photo's you have sent out. However, each individual generator of a solid waste is responsible for evaluating their own waste and making a hazardous waste determination from that evaluation. The RCRA regulations place the burden on the generator to determine whether a solid waste is a hazardous waste – ADEQ cannot make the determination for you. As to your question below, our lab has not yet finished analyzing the ADEQ samples taken on Monday 1/27/14.

From: Rod Eddy [mailto:REddy@pulpmillservices.com]
Sent: Thursday, January 30, 2014 1:34 PM
To: Blake, Ann
Cc: Ronnie Marsh
Subject: requested information

Ms. Blake;
The company we used with the vacuum truck was;
A&E Environmental
1675 Marais Saline Rd. Crossett, Ar. 71635
870-304-6586

And as I stated yesterday, everything that was vacuumed is in the tank on site.

For your information, I met with the property owners this morning and hand delivered the lab results to them.
Has your office concluded your sample testing? We will of course rely on your direction once you have concluded that portion of your investigation along with the lab results we provided you a copy of yesterday and then we will look to you and your office for further (if any) direction.
The flash drive with the pictures, went out in todays mail.

Respectfully,

Rod Eddy, Director of Safety
Pulpmill Services, Inc.
Reddy@pulpmillservices.com
318-325-4351 - Office
318-535-5024 – Cell
318-387-7143 - Fax

Blake, Ann

From: Wilson, Penny
Sent: Wednesday, February 05, 2014 8:12 AM
To: Blake, Ann
Subject: FW: Cleanup
Attachments: IMG_20140203_204251.jpg; IMG_20140204_112410.jpg; IMG_20140204_111547.jpg

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From: VanDerhoff, Dean
Sent: Tuesday, February 04, 2014 3:18 PM
To: Hynum, Tammie; Wilson, Penny
Subject: FW: Cleanup

-----Original Message-----
From: Rod Eddy [REddy@pulpmillservices.com]
Sent: Tuesday, February 04, 2014 02:37 PM Central Standard Time
To: VanDerhoff, Dean
Subject: RE: Cleanup

Dean been raining all day but we are working. We have removed all the affected soil in the yard where the drum is. We have moved the drum to remove the soil from underneath it also. Samples have been sent to American Interplex to determine if it can be taken to a class 1 landfill. Our roll off containers have been requested they want the determination from the lab before they bring them out. The soil has also been removed from the yard next door between the fence and driveway.
Respectfully, Rod Eddy

"VanDerhoff, Dean" <VANDERHOFF@adeq.state.ar.us> wrote:

Got them. Thanks.

-----Original Message-----
From: Rod Eddy [REddy@pulpmillservices.com]
Sent: Monday, February 03, 2014 04:58 PM Central Standard Time
To: VanDerhoff, Dean
Subject: Re: Cleanup

I had 3 pictures returned. Trying again.

"VanDerhoff, Dean" <VANDERHOFF@adeq.state.ar.us> wrote:

I need you to call me or my chief at 5016820831 immediately.